Teacher's CLIL Book

CLIL Lesson

Erasmus+

ERASMUS+ KA2 "CLIL AS A BRIDGE TO REAL LIFE ENGLISH"

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Introduction

This book was created as a result of the project entitled "CLIL as a bridge to real life English". It is an international project with the participation of teachers and school students from Poland, Bulgaria, Greece, Italy, Spain, Turkey and Slovakia.

The project aims to increase the motivation of students to learn foreign languages more intensively and effectively, not only during English lessons, but also during general education classes such as: mathematics, geography, history, chemistry, computer science and others.

Another important goal is to motivate teachers to improve the quality of teaching using new, more attractive and innovative teaching methods.

The result of cooperation between participating schools is a large amount of teaching materials and lesson scenarios for the use of the CLIL method.

The book is divided into three parts – a book for teachers, a book for students and a test book. Each of the partner countries has prepared five lesson scenarios. The book contains a total of thirty-five lesson scenarios that will be used during general education classes for CLIL teaching.

The aim of this book is to develop all communication skills: listening, reading, writing and speaking.

Bulgaria – Introduction

Въведение

Тази книга е създадена в резултат на работата по проект „ Методът CLIL(Обучение чрез езиково интегрирано съдържание)като мост към изучавания в ежедневието английски език". Това е международен проект с участието на учители и ученици от Полша, България, Гърция, Италия, Испания, Турция и Словакия.

Проектът цели да повиши мотивацията на учениците за изучаване на чужди езици, като това става по-интензивно и по-успешно, не само в часовете по английски език, а и по останалите общообразователни предмети като математика, география, история, химия, компютърни науки и др.

Друга важна цел е да мотивира учителите да подобрят качеството си на преподаване като прилагат нови по-атрактивни и по-иновативни обучителни методи.

Резултатът от сътрудничеството между партньорските училища са многобройните обучителни материали и разработени уроци чрез прилагането на метода за езиково интегрирано съдържание.

Книгата е разделена на три части – книга за учителите, книга за учениците и книга с тестове. Всяка от партньорските държави е разработила по пет урока. Книгата съдържа общо тридесет и пет урока, които ще бъдат използвани в часовете от общообразователната програма чрез прилагане на CLIL метода.

Целта е да бъдат развити всички комуникативни умения: слушане, четене, писане и говорене.

Italy – Introduction

Introduzione

Questo libro è stato creato come un risultato del progetto intitolato "CLIL as a bridge to real life English". Esso è un Progetto Internazionale con la partecipazione di studenti e insegnanti provenienti dalla Polonia, Bulgaria, Grecia, Italia, Spagna, Turchia e Slovacchia.

Il progetto mira ad incrementare la motivazione degli studenti all'apprendimento della lingua straniera in modo più intensivo ed efficace, non soltanto durante la lezione di Inglese, ma anche durante le altre discipline come: Matematica, Geografia, Storia, Chimica,Tecnologia e altre.

Un altro importante successo sta nella motivazione degli insegnanti a migliorare la qualità dell'insegnamento usando nuovi, più attrattivi e innovativi metodi di insegnamento.

Il risultato della cooperazione tra le scuole partecipanti sta nella grande quantità di materiale didattico e scenari di lezioni prodotti per l'uso del metodo CLIL.

Il Libro è diviso in tre parti: un libro per gli insegnanti, un libro per gli studenti e un libro peri i test. Ogni paese partecipante ha preparato cinque lezioni. Il libro contiene un totale di trentacinque lezioni che saranno usate durante le ore di discipline non linguistiche per l'insegnamento CLIL.

Lo scopo di questo libro è quello di sviluppare tutte le abilità comunicative: ascoltare, leggere, scrivere e parlare.

Slovakia – Introduction

Úvod

Táto kniha vznikla ako výsledok spolupráce na projekte s názvom „CLIL as a Bridge to Real Life English". Jedná sa o medzinárodný projekt s účasťou pedagógov a študentov stredných škôl z Poľska, Bulharska ,Grécka Talianska ,Španielska, Turecka a Slovenska .

Cieľom projektu je zlepšiť motiváciu študentov učiť sa cudzie jazyky intenzívnejšie a efektívnejšie, nielen na hodinách anglického jazyka, ale aj na hodinách všeobecno-vzdelávacích predmetov, ako napr. matematika, geografia, dejepis, informatika, chémia a podobne.

Ďalším dôležitým cieľom je motivovať učiteľov, aby zlepšili kvalitu vyučovania pomocou nových, atraktívnejších a inovatívnych vyučovacích metód.

Výsledkom spolupráce zúčastnených škôl je množstvo učebných materiálov a plánov vyučovacích hodín pre aplikáciu metódy CLIL.

Kniha je rozdelená na tri časti - knihu pre učiteľov, knihu pre študentov a knihu testov. Každá z partnerských krajín pripravila päť lekcií. Kniha obsahuje celkovo tridsaťpäť lekcií, ktoré budú použité počas vyučovania všeobecno- vzdelávacích predmetov metódou CLIL.

Cieľom tejto knihy je rozvíjať všetky komunikačné zručnosti: počúvanie, čítanie, písanie a rozprávanie.

Poland – Introduction

Wstęp

Książka ta powstała jako rezultat projektu pt. „CLIL jako pomost do prawdziwego życia po angielsku". Jest to międzynarodowy projekt z udziałem nauczycieli i uczniów szkół z Polski, Bułgarii, Grecji, Włoszech, Hiszpanii, Turcji i Słowacji.

Projekt ma na celu zwiększenie motywacji uczniów do nauki języków obcych bardziej intensywnie i skutecznie, nie tylko na lekcjach języka angielskiego, ale także na godzinach przedmiotów kształcenia ogólnego, takich jak: matematyka, geografia, historia, chemia, informatyka i innych.

Innym ważnym celem jest motywowanie nauczycieli do podnoszenia jakości nauczania z wykorzystaniem nowych, bardziej atrakcyjnych i innowacyjnych metod nauczania. Efektem współpracy szkół uczestniczących jest duża ilość materiałów dydaktycznych oraz scenariusze lekcji do stosowania metody CLIL.

W rezultacie powstały trzy książki- książka dla nauczycieli, książka dla uczniów oraz książka testów. Każdy z krajów partnerskich przygotował pięć scenariuszy lekcji. Książka zawiera w sumie trzydzieści pięć scenariuszy lekcji, które będą wykorzystywane na przedmiotach kształcenia ogólnego do nauczania metodą CLIL.

Celem niniejszej książki jest rozwijanie wszystkich umiejętności komunikacyjnych: słuchanie, czytanie, pisanie i mówienie.

Spain – Introduction

Introducción

Este libro ha sido creado como resultado del proyecto Erasmus Plus 'CLIL as a Bridge to Real Life English'. Es un proyecto internacional con la participación de profesores y alumnos de institutos de Polonia,Bulgaria, Grecia, Italia, España, Turquía y Eslovaquia.

El principal objetivo de este proyecto es aumentar la motivación del alumnado a la hora de aprender una lengua extranjera, de una manera más intensiva y efectiva, no sólo durante las clases de inglés, sino también durante las clases de otras asignaturas como matemáticas, geografía e historia, química, informática y otras.

Otro objetivo importante es motivar al profesorado a mejorar la calidad de enseñanza usando nuevos métodos , más atractivos e innovadores.

El resultado de la cooperación entre los institutos participantes es una gran cantidad de materiales y unidades para ser usados dentro de la metodología CLIL.

Este libro está dividido en tres partes : libro del profesor, libro del alumnos y exámenes.

Cada país participante ha elaborado cinco secuencias/ sesiones CLIL , por lo que el libro contiene un total de treinta y cinco sesiones que se usarán en clases con dicha metodología CLIL. La finalidad de este libro es desarrollar las habilidades comunicativas del alumnado: listening, reading, writing y speaking.

Turkey – Introduction

Giriş

Bu kitap "GERÇEK YAŞAM İNGİLİZCESİNE KÖPRÜ OLARAK CLIL" adlı projenin çıktılarından biri olarak hazırlanmıştır. Bu proje, Polonya, Bulgaristan, Yunanistan, İtalya, İspanya, Türkiye ve Slovakya'dan öğretmen ve öğrencilerin katılımıyla oluşan uluslararası bir projedir.

Proje, öğrencilerin sadece İngilizce derslerinde değil, bunun yanı sıra matematik, coğrafya, tarih kimya, bilişim teknolojileri ve diğer derslerde de yabancı dilleri daha yoğun ve etkili bir şekilde öğrenmeleri için motivasyonlarını arttırmayı amaçlamaktadır.

Diğer önemli bir hedef ise öğretmenleri yeni, daha etkili, yenilikçi öğretim metotları kullanarak öğretimin kalitesini arttırmayı sağlamaya motive etmektir.

Bu projede yer alan okulların işbirliğinin sonucu, CLIL metodunun kullanımı için oluşturulan çok sayıda öğretim materyalleri ve ders planlarıdır.

Kitap üç bölüme ayrılmıştır: öğretmen kitabı, öğrenci kitabı ve çalışma kitabı. Her ortak ülke beş adet ders planı hazırlamıştır. Kitap toplamda CLIL derslerinde kullanılacak 35 ders planını içermektedir. Bu kitabın amacı iletişim becerilerini geliştirmektir: dinleme, okuma, yazma ve konuşma.

Greece – Introduction

ΕΙΣΑΓΩΓΗ

Αυτό το βιβλίο δημιουργήθηκε ως αποτέλεσμα του προγράμματος με τον τίτλο «CLIL as a bridge to real life English». Είναι ένα διεθνές πρόγραμμα με τη συμμετοχή καθηγητών και μαθητών από την Πολωνία, τη Βουλγαρία, την Ελλάδα, την Ιταλία, την Ισπανία, την Τουρκία και τη Σλοβακία.

Το πρόγραμμα στοχεύει να αυξήσει το κίνητρο των μαθητών να μάθουν ξένες γλώσσες πιο εντατικά και αποτελεσματικά, όχι μόνο κατά τη διάρκεια των μαθημάτων της Αγγλικής γλώσσας, αλλά και κατά τη διάρκεια των μαθημάτων γενικής παιδείας όπως: μαθηματικά, γεωγραφία, ιστορία, χημεία, πληροφορική και άλλα.

Άλλος ένας σημαντικός στόχος είναι να κινητοποιηθούν οι καθηγητές να βελτιώσουν την ποιότητα της διδασκαλίας τους χρησιμοποιώντας νέες, πιο ελκυστικές και καινοτόμες διδακτικές μεθόδους.

Το αποτέλεσμα της συνεργασίας μεταξύ των συμμετεχόντων σχολείων είναι ένα μεγάλο σύνολο διδακτικού υλικού και σεναρίων μαθήματος για τη χρήση της μεθόδου CLIL.

Το βιβλίο χωρίζεται σε τρία μέρη – ένα βιβλίο για τους καθηγητές, ένα βιβλίο για τους μαθητές και ένα βιβλίο διαγωνισμάτων.

Καθεμία από τις χώρες που συμμετέχουν έχει προετοιμάσει πέντε σενάρια μαθήματος. Το βιβλίο περιέχει ένα σύνολο από τριανταπέντε σενάρια μαθήματος που θα χρησιμοποιηθούν κατά τη διάρκεια των μαθημάτων γενικής παιδείας για τη διδασκαλία CLIL.

Ο στόχος αυτού του βιβλίου είναι η ανάπτυξη όλων των επικοινωνιακών δεξιοτήτων: ακουστική ικανότητα, ανάγνωση , γραπτός και προφορικός λόγος.

Unit 1 – History

Lesson 1 – The Bulgarian Alphabet

School subject – History

Topic – THE BULGARIAN ALPHABET

Aims:

1. To increase student's knowledge of subject content.
2. To develop student's knowledge of content related lexis.
3. To develop all four language skills (listening, reading, speaking, writing).
4. To provide material and information for further topic and language based studies.
5. To raise students interest in the history of the capital city.

Age group – Teens

Level – B2

Time – 40 minutes

Materials:

- CLIL lesson worksheet;
- interactive Digital Board;
- multimedia;
- demonstration materials.

Introduction

This topic and accompanying tasks/activities offers the teachers and students the opportunity both to develop content and language knowledge at an appropriate depth over a single lesson or a series of class hours. It aims to develop student's vocabulary about some notions of international importance, some specifically historical vocabulary, to deepen the knowledge about the specific historical issue, to give proof about the common European historical background, values, beliefs, etc. It also aims to find some similarities between the native language and the English language and to enlarge the knowledge about the English grammar and vocabulary.

Content objectives

With the completion of the unit students will be able to:

1. learn some new words and terms and new content about the Bulgarian history – alphabet;
2. know more about the history of the creation of the Slavic alphabet;
3. understand better some historical notions, terms and texts;

4. relate the vocabulary and information in the form of new knowledge and skills, which will be used for further, more advanced development;
5. define historical notions, events, periods;
6. characterize with ease the read in the text thanks to the more detailed activities in the unit;
7. use more advanced information and curious fact about the Bulgarian alphabet, language and culture.

Language objectives

Language obligatory:

Students will:

1. acquire key vocabulary;
2. group new words into the semantic family of history related words and notions. Deity, roman Catholic, Byzantine, Orthodox church, missionary, depiction, emperor, disciple, clergy, wreath;
3. find the most suitable meaning of the words in their mother tongue;
4. use past tenses in active and passive voice.

Language compatible:

Students will be able to:

1. understand the language of describing, defining and explaining the historical terms and notions;
2. understand more specific vocabulary thanks to content.

Instructional strategies

Brain storming: (Using pictures to prompt them if necessary) Useful to give us indicator of their previous knowledge and start grouping the necessary vocabulary in Semantic fields.

Semantic families. Students will decide which words to include on what groups.

Static verbs/active verbs: active and passive structures.

Cultural objectives

Students will:

1. be conscious of the influence of the invention of the Slavic script for the Bulgarian and European history, for the adoption of Christianity and for the cultural development of people and the quality of their life;
2. understand the cultural, historical, religious and literary aspects of the European culture in the context of the Bulgarian history;
3. become aware of the importance of knowing the historical past in order to improve their everyday life.

Making connections

Cross curricular extensions: Religion, Music, Literature, Languages, history.

Assessment

- everyday observation;
- development of the proposed activities;
- vocabulary and Grammar Assessment;
- content Assessment.

Procedure

LEAD – IN OR PRE – READING ACTIVITIES (5 minutes)

Routine activities – checking the register, student's HW and defining the topic.

The teacher tells the students that they are going to read a text about the invention of the Bulgarian alphabet. Students brainstorm the topic – Discuss the questions.

1. What do you know about the Bulgarian Alphabet?
2. Who created it?
3. How many letters are there in the contemporary Bulgarian alphabet?
4. What is the dominant and designated by the constitution religion in Bulgaria?
5. Do you know when Bulgaria adopted Christianity?

WHILE – READING ACTIVITIES

Ex.1. Reading and learning new information **(10 minutes)**

Read the text and word bank. After that translate the words from the work bank into your language. Thus, they will drill again the new content.

Ex.2. Speaking - Retell the story. Use the prompts to help you. **(10 minutes)**

On 24 May Bulgarians celebrate … The first official celebration was in … Cyril and Metodius were born … They created … After that they … They had many … While they … In Veliki Preslav, they … Kliment wrote … and named it after …

Students will have to fill in the gaps with the suitable words and information from the text. This way they will develop their language and content knowledge simultaneously.

Ex.3. Discussion – What is the benefit for the Bulgarians in particular and for all Europeans from the creation of the Cyrillic alphabet? Thus they will practice their speaking skills. **(5 points)**

AFTER – READING AND LISTENING ACTIVITIES

Ex.1. Find the suitable continuation of the sentences **(5 minutes)**

Students are to read some interesting and curious facts about the Bulgarian language and alphabet. After labeling them students will have more specific information about the alphabet.

Ex.2. Listen to the anthem of the Bulgarian alphabet. What do you feel? **(4 minutes)**

https://youtu.be/A2t8LHg2auY

At the end of the lesson students will have practiced the 4 skills, learning new information and curious facts about the Bulgarian alphabet, about our common home – Europe in English!

FOLLOW – UP ACTIVITIES – HOMEWORK (1 minute) to give instructions for the next lesson

Vocabulary extension – HW: Task – The chart below expresses the clusters of the common Slavic language. Look at it carefully and try to comment it. Where is Bulgaria? Does anything surprise you? Students are intended to develop their speaking activities, to develop analytical thinking and to provoke their curiosity to learn more about the Slavic languages.

ICT: Find the text of the anthem of the Bulgarian education and try to translate the lyrics into English. This way students can develop their English vocabulary.

Prepared by Tanya Lalkova – Ivanova

ANSWER KEY

Did you know that:

1. Evidence that St. Cyril was the author of the first Bulgarian alphabet, the Glagolitic, is found in a Latin document called the Salzburg Memorandum of 871 AD which says that St. Methodius came to Pannonia with the "newly invented Slavic letters".
2. St. Constantine – Cyril created the Glagolitic alphabet based on the Slavic dialect spoken around Salonica, today's Thessaloniki in Greece, which belongs to the East Bulgarian Rupi Dialects.
3. The Glagolitic letters used the three holy signs of Christianity – the cross, the circle, and the triangle (the Trinity) – for its letters.
4. The literary language created by St. Cyril and St. Methodius in the middle of the 9th century AD was Bulgarian, the so called Old Bulgarian, also known today as Church Slavonic.
5. The Bulgarian language is unique among Slavic languages, having eliminated the case system and transformed the definite article into a suffix system.
6. The history of the Bulgarian language is divided into three periods:
   - Old Bulgarian(Old Church Slavonic), 9th – 11th century;
   - Middle Bulgarian, 12th – 16th century;
   - Modern Bulgarian, from the 16th century to the present.
7. Why do we celebrate on the 24th of May exactly – the day of St. Cyril and St Methodius following the church calendar is 11th of May, but after 1916 when in Bulgaria the Gregorian calendar was adopted the date was changed according to the official state calendar and thus it formed 24th of May.
8. The song "Go, people revived" by Stoyan Mihailovski's poem and music – Panayot Pipkov was announced for anthem on the Bulgarian education.

A6 C8

B2 D7

E1 G3

F4 H5

Assessment of the lesson

What are the benefits of the lesson?

……

……

……

……

No.	question	evaluation			
		poor	satisfactory	good	excellent
1	Do you think that the aim of the lesson was achieved?				
2	Was the timing enough?				
3	Were the activities motivating for the students?				
4	Was the lesson interactive?				
5	Do you think the lesson helps the students improve the specific vocabulary on the lesson topic and knowledge in English?				
6	Do you think the lesson helps the students improve their skills				
A	Reading				
B	Listening				
C	Speaking				
D	Writing				

Ideas for improvement in the Teacher's book after each lesson.

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Lesson 2 – History of the Bulgarian Capital – Sofia

School subject – History

Topic – HISTORY OF THE BULGARIAN CAPITAL - SOFIA

Aims:

1. To increase student's knowledge of subject content.
2. To develop student's knowledge of content related lexis.
3. To develop all four language skills (listening, reading, speaking, writing).
4. To provide material and information for further topic and language based studies.
5. To raise students interest in the history of the capital city.

Age group – Teens

Level – B2

Time – 40 minutes

Materials:

- CLIL lesson worksheet;
- interactive Digital Board;
- multimedia;
- demonstration materials.

Introduction

This topic and accompanying tasks/activities offers the teachers and students the opportunity both to develop content and language knowledge at an appropriate depth over a single lesson or a series of class hours. It aims to develop student's vocabulary about some notions of international importance, some specifically historical vocabulary, to deepen the knowledge about the specific historical issue, to give proof about the common European historical background, values, beliefs, architecture etc. It also aims to find some similarities between the native language and the English language and to enlarge the knowledge about the English grammar and vocabulary.

Content objectives

With the completion of the unit students will be able to:

1. learn some new international words and terms and new content about the Bulgarian history;
2. know more about the history of Europe and Sofia;
3. understand better some historical notions, terms and texts;
4. relate the vocabulary and information in the form of new knowledge and skills, which will be used for further, more advanced development;
5. define historical notions, events, periods;
6. characterize with ease the seen in the film thanks to the more detailed activities in the unit;

7. use more advanced information and curious fact about Sofia.

Language objectives

Language obligatory:

Students will:

1. acquire key vocabulary;
2. group new words into the semantic family of history related words and notions. geological, antique, medieval, ultramodern, empire, civilization, Romulus and Remus, the Eternal City, Khan, a rotunda, cult, polytheism, votive, Orthodox 'Church, tsar, Byzantine, mosque, synagogue;
3. find and replace synonyms;
4. use present and past tenses in active and passive voice;
5. use comparative and superlative structures;
6. use reported speech to paraphrase information and practice some prepositions.

Language compatible:

Students will be able to:

1. understand the language of describing, defining and explaining the historical terms and notions;
2. understand more specific vocabulary thanks to content.

Instructional strategies

Brain storming: (Using pictures to prompt them if necessary) Useful to give us indicator of their previous knowledge and start grouping the necessary vocabulary in Semantic fields.

Semantic families: Students will decide which words to include on what groups.

Static verbs/action verbs: active and passive structures.

Cultural objectives

Students will:

1. be conscious of the influence of the great civilizations in the history and cultural behavior of people and in their quality of life;
2. understand the cultural, historical, religious and literary aspects of the European culture in the context of the Bulgarian;
3. become aware of the importance of knowing the historical past in order to improve their everyday life.

Making connections

Cross curricular extensions – architecture, religion, music, arts and crafts, theatre, literature, languages.

Assessment:

- everyday observation;

- development of the proposed activities;
- vocabulary and Grammar Assessment;
- content Assessment.

Procedure

LEAD – IN OR PRE-READING AND LISTENING ACTIVITIES (3 minutes)

Routine activities – checking the register, student's HW and defining the topic.

The teacher tells the students that they are going to listen to, watch and read a text about Sofia.

Students brainstorm the topic – What do you know about … (show pictures with some sightseeings).

Ex.1. Predicting content **(7 minutes)**

Before students listen to the introduction of the film about Sofia they will have to read Ex. 1 from the worksheet and decide if the statements are true or false. After that they will have to listen, watch, read and check their answers.

https://www.youtube.com/watch?v=2oUwgGLiz0c

Ex.2. Vocabulary extension **(5 minutes)**

Before doing task 2 students will have some time to read the words bank and to try to explain the words or provide synonyms. They will also have to translate the words into their native language. After that they will have to replace the bolded words in the text with their synonyms.

WHILE – READING AND LISTENING ACTIVITIES

Task 1. Listening to learning new information **(10 minutes)**

Students will listen to another part from the film and will have to elicit some essential information. After doing this they will have to match the first part of the sentence with its second part. Thus, they will drill again the new content.

Task 2. Noticing and analyzing language (reading) **(5 minutes)**

Analyzing the new vocabulary, students will have to fill in the gaps with the suitable words. This way they will develop their language and content knowledge simultaneously.

Task 3. Students will have to label the pictures following the characteristics of the different temples and providing arguments. Thus they will practice their speaking skills.

AFTER – READING AND LISTENING ACTIVITIES

Ex.1. What do you remember – writing **(5 minutes)**After labeling them students will have to write down what they remember from the video about the pictures.

Ex.2. Read and do – fill in the suitable preposition **(4 minutes)**

Students are to read some interesting and curious facts about Sofia and at the same time revise their grammar about the prepositions.

At the end of the lesson students will have practiced the 4 skills, learning new information and curious facts about the Bulgarian capital Sofia, about our common home – Europe in English!

FOLLOW – UP ACTIVITIES – HOMEWORK (1 minute) to give instructions for the next lesson

Vocabulary extension – students will practice the newly learnt vocabulary talking about 3 things that impressed them the most concerning the new content.

Project work – collaborative task in the form of PPT presentation about a place of interest in Sofia.

Prepared by Tanya Lalkova – Ivanova

ANSWER KEY

Pre – Reading and listening activities

Ex.1. Decide if the following sentences are true (T) or false (F). Listen, read and check.

1. F
2. T
3. T
4. F
5. T
6. F

Ex.2. Replace the underlined words with their synonyms.

1. *renowned* = legendary
2. *splendid* = magnificent
3. *blend* = mixture
4. *antique* = ancient
5. *vanished* = disappeared
6. *founded* = established
7. *eternal* = everlasting
8. *found* = discovered

While – Reading and listening activities

Task 1. Listening and watching comprehension. Watch the film "Sofia – the history of Europe" and match the beginning of the sentence with its ending.

1. D
2. F
3. J
4. H
5. B
6. I
7. J
8. G
9. A
10. E

Task 2. Fill in the blanks with words or phrases from the list.

1. foot
2. architecture
3. churches
4. house
5. downtown
6. religions
7. modern
8. heritage

Task 3. Label the temples of the four major religions – Provide arguments for your choice.

1)the mosque	2) the synagogue	3) the catholic cathedra	4) the orthodox church




the catholic cathedral the orthodox church the mosque the synagogue

After – Reading and listening activities

Ex.1. Label the pictures. Write one sentence about each of the pictures!

1. Tserni Vruh
2. The National Cultural Palace
3. The National Theatre
4. The Boyana Church
5. St. Alexander Nevski Cathedral
6. The statue of Saint Sofia

Ex.2. Fill in the missing prepositions.

1. in
2. of
3. of
4. in
5. from
6. on
7. without
8. on
9. with
10. in
11. of

Assessment of the lesson

What are the benefits of the lesson?

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No.	question	evaluation			
		poor	satisfactory	good	excellent
1	Do you think that the aim of the lesson was achieved?				
2	Was the timing enough?				
3	Were the activities motivating for the students?				
4	Was the lesson interactive?				
5	Do you think the lesson helps the students improve the specific vocabulary on the lesson topic and knowledge in English?				
6	Do you think the lesson helps the students improve their skills				
A	Reading				
B	Listening				
C	Speaking				
D	Writing				

Ideas for improvement in the Teacher's book after each lesson.

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Lesson 3 – The Gold of the Thracians in Bulgaria

School subject – History

Topic – THE GOLD OF THE THRACIANS IN BULGARIA

Aims:

1. To increase student's knowledge of subject content.
2. To develop student's knowledge of content related lexis.
3. To develop all four language skills (listening, reading, speaking, writing).
4. To provide material and information for further topic and language based studies.
5. To raise students interest in the history of the Thracians in order to enlarge the topic.

Age group – Teens

Level – B2

Time – 40 minutes

Materials:

- CLIL lesson worksheet;
- interactive Digital Board;
- multimedia;
- demonstration materials.

Introduction

This topic and accompanying tasks/activities offers the teachers and students the opportunity both to develop content and language knowledge at an appropriate depth over a single lesson or a series of class hours. It aims to develop student's vocabulary about some notions of international importance, some specifically historical vocabulary, to deepen the knowledge about the specific historical issue, to give proof about the existence of the Thracians tribes in the territory of nowadays Bulgaria, to raise the interest of the students to the treasures, excavations, Thracian mounds and sacred places in the territory of the country, to raise their curiosity in history, to help them enlarge their vocabulary, which will improve their level in English either.

Content objectives

With the completion of the unit students will be able to:

1. learn some new international words and terms and new content about the history of Thracians;
2. know more about the history of the Thracians, Bulgaria and Europe;
3. understand better some historical notions, terms and texts;
4. relate the vocabulary and information in the form of new knowledge and skills, which will be used for further, more advanced development;
5. define historical notions, events, periods;

6. characterize with ease what they read in the unit thanks to the more detailed activities;
7. use more advanced information about the Thracian treasures in the territory of Bulgaria.

Language objectives

Language obligatory:

Students will:

1. acquire key vocabulary;
2. match words with their explanations and translate them into the native language finding the most suitable equivalent;
3. find and replace antonyms;
4. use present and past tenses in active and passive voice;
5. form and ask questions;
6. master the use of prepositions;
7. use comparative and superlative constructions.

Language compatible:

Students will be able to:

1. understand the language of describing, defining and explaining the historical terms and notions;
2. understand more specific vocabulary thanks to content.

Instructional strategies

Brain storming: (Using pictures) Useful to give us indicator of student's previous knowledge and start grouping the necessary vocabulary in Semantic fields;

Except for the standard activities – choose the correct answer, which is the…, we introduce some timelines, picture analyses and speculations;

Static verbs/action verbs: active and passive structures – talking about past events.

Cultural objectives

Students will:

1. be conscious of the influence of the great civilizations in the history and cultural behavior of people and in their quality of life;
2. understand the cultural, historical, religious and literary aspects of the European culture in the context of the archeological excavations and artifacts in the territory of nowadays Bulgaria;
3. become aware of the importance of knowing the historical past in order to improve their everyday and future life;
4. develop their specific knowledge about the Thracians.

Making connections

Cross curricular extensions: Architecture, Religion, Arts and crafts, Literature, Languages.

Assessment:

- everyday observation;
- development of the proposed activities;
- vocabulary and Grammar Assessment;
- content Assessment .

Procedure

LEAD – IN OR PRE-READING ACTIVITIES (3 minutes)

Routine activities – checking the register, student's HW and defining the topic.

The teacher tells the students that they are going to brainstorm the topic with some questions about the Thracians. Thus we introduce the topic and develop student's speaking skills.

Ex.1. Predicting content **(4 minutes)**

Before students read the text about the Thracian treasures they will have to read Ex. 1 from the worksheet and speculate about what they can see in the picture. Thus they will practice their speaking and will draw their attention to the topic.

Ex.2. Analyzing pictures **(3 minutes)**

The topic is introduced to the students through some pictures of Thracian tombs and mounds.

WHILE – READING ACTIVITIES

Task 1. Reading for learning new information **(15 minutes)**

Read the text about the Thracian treasures to learn more about the issue. After reading the text, match the words to their explanations. Then translate them into Bulgarian with the help of the explanation and the context. Thus, students will drill again the new content and will try to find the most suitable word in their native language.

Task 2. Students have to arrange the treasures using timeline according to the year when they were discovered – practice talking about years. **(2 minutes)**

Task 3. Students have to arrange the treasures using timeline according to the year when they date back – thus, they will improve their analytic skills. **(2 minutes)**

Task 4. Find out the … : this exercise develops the skills of using superlative forms and analyzing new information. **(2 minutes)**

Task 5. Choose the correct answer (a, b, c, or d) according to the text – final drilling of the text for more details. **(2 minutes)**

All activities aim to enrich the English vocabulary, to master the English grammar and to learn new content on the topic.

AFTER – READING ACTIVITIES

Ex.1. Listen to the review to summarize the information and the curious facts about Orpheus

and fill in with the missing words. After that read the text again and replace the highlighted words with their antonyms – vocabulary practice. **(4 minutes)**

Ex.2. Write 3 things that impressed you from the text using the new vocabulary. **(2 minutes)**

This way we integrate some writing skills in the lesson, so that we have all 4 skills practiced.

FOLLOW – UP ACTIVITIES – HOMEWORK (1 minute) to give instructions for the next lesson

Vocabulary extension – students will write their own sentences with the words from the text about the Thracian treasures. Thus they will revise the vocabulary and the content of the unit.

ICT – students will develop their skills for finding and sorting specific information on the net. After that they will have to use some highlights and pictures and design educational posters.

Prepared by Tanya Lalkova – Ivanova

ANSWER KEY

Pre – Reading activities

Brainstorming – Who are the Thracians? What mysteries do they hold? What is the meaning of their fabulous treasures today? What was the function of gold in the life of their kings and noblemen? Why were they buried with their gold? What do the latest discoveries of the Thracian treasures reveal to us? – *students give their own answers*

Ex.1. Look at the map of Bulgaria. Do you know any of the treasures depicted on it? What do you know about them? Tell the class. – *students give their own answers*

Ex.2. These are some Thracian mounds and tombs. Do you recognize them? What do you know about them? Tell the class.

Kazanluk

Svestari

Goljama kosmatka

Starosel

Mezek

While – Reading activities

Task 1. Read the text about the Thracian treasures to learn more about the issue. After reading the text match the words to their explanations. Then translate them into Bulgarian according the explanation and the context.

- *pharaoh* – a ruler of ancient Egypt
- *yield* – to produce
- *mankind* – humankind
- *sensational* – very interesting, exciting, and surprising
- *necropolis* – an area of land where dead people are buried, especially an ancient one = cemetery
- *artifact* – an object such as a tool, weapon etc. that was made in the past and is historically important
- *trough* – a long narrow open container that holds water or food for animals
- *carat* – a unit for measuring how pure gold is 9/18/22/24 carat gold
- *Moses* – According to the story in the Bible, he brought the Israelites out of Egypt. They were able to escape from the Egyptians when God made the waters of the Red Sea move so that they could walk across. Moses received the Ten Commandments (=God's laws) from God on Mount Sinai.
- *funeral* – a religious ceremony for burying or cremating (=burning) someone who has died
- *depict* – to describe something in writing or speech, or to show them in a painting, picture etc.
- *paragon* – someone who is perfect or is extremely brave
- *mound* – a pile of earth or stones that looks like a small hill
- *by chance* – not at all planned, accidentally
- *came upon* – to find or discover something or someone by chance
- *worship* – to show respect and love for a god, especially by praying in a religious building
- *fundamental* – relating to the most basic and important parts of something
- *inscription* – a piece of writing inscribed on a stone, in the front of a book etc.
- *immortality* – the state of living for ever or being remembered for ever
- *offering* – something that is given to God
- *invaluable* – extremely useful
- *plunder* – to steal large amounts of money or property from somewhere, especially during a war
- *chariot* – a vehicle with two wheels pulled by a horse, used in ancient times in battles and races
- *sanctuary* – the part of a religious building that is considered to be the most holy

Task 2. Arrange the treasures using timeline according to the year when they were discovered.

1972 – Varna

1925 – Vulchetrun

2004 – the valley of the Thracian kings

1949 – Panagyurishte

1986 – Rogozen

Task 3. Arrange the treasures using timeline according to the year when they date back.

1. 4500 years BC – Varna
2. 1500 BC – Vulchetrun
3. fifth century BC – the valley of the Thracian kings
4. 3rd century BC – Panagyurishte
5. between the 5th and 4th century BC – Rogozen

fifth century, 4500, between the 5th and 4th century BC, 3rd century BC, 1500

Task 4. Find out:

1. Which is the oldest treasure? Varna
2. Which is the largest gold treasure? Vulchetrun
3. Which is the largest silver treasure? Rogozen
4. Which is the most beautiful one? Panagyurishte
5. Which artifact proves that a Thracian ruler was buried in the tombstone? The bronze head

Task 5. Choose the correct answer (a, b, c, or d) according to the text.

1. d
2. b
3. a
4. c
5. d
6. b

After – Reading activities

Ex.1. Listen to the review and the information about Orpheus and fill in the missing words. After that replace the highlighted words with their antonyms.

1. settlers
2. sanctuaries
3. architecture
4. 60,000
5. valley
6. curious
7. legendary
8. philosophy
9. village

- *preserved* - wasted
- *buried* - excavated
- *exist* - perish
- *life* - death
- *amazing* - usual
- *famous* - unknown
- *believed* - doubted

Ex.2. Write 3 things that impressed you the most about the Thracian treasure or the civilization of the Thracians – student's own answers.

🗁 HW Write your own sentences with the words from the text about the Thracian treasures.

💻 ICT Find more information about the other uncovered Thracian treasures in Bulgaria (for example, the Borovo Silver Treasure, the Letnitsa Treasure, the Mogilanska Mound Treasure, the Zlatinitsa Mound Treasure, Lukovit Treasure etc.) Prepare posters with pictures and information about them.

Assessment of the lesson

What are the benefits of the lesson?

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No.	question	evaluation			
		poor	satisfactory	good	excellent
1	Do you think that the aim of the lesson was achieved?				
2	Was the timing enough?				
3	Were the activities motivating for the students?				
4	Was the lesson interactive?				
5	Do you think the lesson helps the students improve the specific vocabulary on the lesson topic and knowledge in English?				
6	Do you think the lesson helps the students improve their skills				
A	Reading				
B	Listening				
C	Speaking				
D	Writing				

Ideas for improvement in the Teacher's book after each lesson.

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Lesson 4 – Thracians

School subject – History

Topic – THRACIANS

Aims:

1. To increase student's knowledge of subject content.
2. To develop student's knowledge of content related lexis.
3. To develop all four language skills (listening, reading, speaking, writing).
4. To provide material and information for further topic and language based studies.
5. To raise students interest in the history of the Thracians in order to enlarge the topic.

Age group – Teens

Level – B2

Time – 40 minutes

Materials:

- CLIL lesson worksheet;
- interactive Digital Board;
- multimedia;
- demonstration materials.

Introduction

This topic and accompanying tasks/activities offers the teachers and students the opportunity both to develop content and language knowledge at an appropriate depth over a single lesson or a series of class hours. It aims to develop student's vocabulary about some notions of international importance, some specifically historical vocabulary, to deepen the knowledge about the specific historical issue, to give proof about the existence of the Thracians tribes in the territory of nowadays Bulgaria, to raise the interest of the students to the life, culture, Thracian mounds and sacred places in the territory of the country, to raise their curiosity in history, to help them enlarge their vocabulary, which will improve their level in English either.

Content objectives

With the completion of the unit students will be able to:

1. learn some new words and terms and new content about the history of Thracians;
2. know more about the history of the Thracians, Bulgaria and Europe;
3. understand better some historical notions, terms and texts;
4. relate the vocabulary and information in the form of new knowledge and skills, which will be used for further, more advanced development;
5. define historical notions, events, periods;
6. characterize with ease what they read in the unit thanks to the more detailed activities;
7. use more advanced information about the Thracians who lived in the territory of Bulgaria.

Language objectives

Language obligatory:

Students will:

1. acquire key vocabulary;
2. match titles with the suitable content;
3. translate vocabulary into the native language finding the most suitable equivalent;
4. listen for gist;
5. use past tenses in active and passive voice;
6. form and ask questions;
7. master their speaking skills.

Language compatible:

Students will be able to:

1. understand the language of describing, defining and explaining the historical terms and notions;
2. understand more specific vocabulary thanks to content.

Instructional strategies

Brain storming: Useful to give us indicator of student's previous knowledge and start grouping the necessary vocabulary in Semantic fields.

We introduce the idea for mind maps, which is another method for stimulation of the brain activities, which helps the students to organize better and remember more with less effort.

Cultural objectives

Students will:

1. be conscious of the influence of the great civilizations in the history and cultural behavior of people and in their quality of life;
2. understand the cultural, historical, religious and literary aspects of the European culture in the context of the archeological excavations and artifacts in the territory of nowadays Bulgaria;
3. become aware of the importance of knowing the historical past in order to improve their everyday and future life;
4. develop their specific knowledge about the Thracians.

Making connections

Cross curricular extensions: Architecture, Religion, Arts and crafts, Literature, Languages.

Assessment:

- everyday observation;
- development of the proposed activities;
- vocabulary and Grammar Assessment;

- content Assessment;
- writing abilities.

Procedure

LEAD – IN OR PRE-READING ACTIVITIES (3 minutes)

Routine activities – checking the register, student's HW and defining the topic.

The teacher tells the students that they are going to brainstorm the topic with some questions about the Thracians. Thus we introduce the topic and develop student's speaking skills. (5 minutes for brainstorming the words and 5 min. for speaking).

WHILE – READING ACTIVITIES

Task 1. Reading for learning new information **(10 minutes)**

Read the text about the Thracians to learn more about the issue. After reading the text and the word bank translate the explained vocabulary into your own language. Thus, students will drill again the new content and will try to find the most suitable word in their native language.

Task 2. Students have to entitle the paragraphs **(5 minutes)**

Task 3. Listening for gist. Students have to listen to some information about the town of Sevtopolish – today the Valley of the Thracian kings and fill in with the missing words.

All activities aim to enrich the English vocabulary, to master the English grammar and to learn new content on the topic. **(5 minutes)**

AFTER – READING ACTIVITIES

Ex.1. Task – form 10 questions about the provided information in the curious facts section. There is some curious information about the Thracians. Here we intend to master the asking questions skills, which is really important not only during communication but also for critical thinking, getting more profound knowledge and remembering new information. **(8minutes)**

FOLLOW-UP ACTIVITIES – HOMEWORK

Find information and present it in front of the class about one of the Thracian tombs at the territory of the country.

(2 minute) to give instructions for the next lesson

Vocabulary extension – students will write their own sentences with the words from the text about the Thracian toms. Thus they will revise the vocabulary and the content of the unit.

ICT – students will develop their skills for finding and sorting specific information on the net. After that they will have to use some highlights and pictures and design educational handouts.

Prepared by Tanya Lalkova – Ivanova

ANSWER KEY

Pre – Reading activities

Optional answers for the pre–reading task. Time for the task – 5 minutes for thinking and 5 minutes for discussing.

- Who – Orpheus, Spartacus, Odrys
- Why – for food, decoration, armour
- What – gold, horses, tombs
- Where – Bulgaria, Kazanluk valley, Sevtopolis
- When – bronze age, 5-1st century BC, old times
- How – planting, breeding, processing

While – Reading activities

Ex.1. After reading the text quickly and the explanations of the words translate them into your language.

Ex.2. Entitle the paragraphs.

1 Life after death, 2 Arts and medical knowledge, 3 Agriculture, life and crafts, 4 Warriors, 5 Language and writing, 6 State, 7 Gods

Thracians were the oldest inhabitants of today's Bulgarian lands settling there 2500 years BC.

A. agriculture, life and crafts

These exceptional peoples inhabited enormous plain fields where they grew wheat and fruit. That's why the chroniclers described their lands as fertile. The Thracians were also able to grow vines, from which they made fine wine. But the sweetest of all were their beekeepers' skills. They received a lot of honey and wax and traded with the Greeks. On their lands they also planted the rose – rare for the ancient times flower that had enough spines to protect itself from the sheep and cows that the Thracians had grown. This ancient nation was able to extract ore and make fine, ornate clay pots. They were real masters in processing skin and carving wood.

B. warriors

They were also known for their military feats and their special tribute to the horses – depicting them everywhere – on the walls of tombs, vases, belts and marble slabs. The warriors were riding a chariot drawn by beautiful white horses, carrying gold weapons, because the Thracians were masters of metal processing and made wonderful items of them.

C. state

Only the Odrys managed to create their own country. A Greek chronicler described the Odryan king as the most significant in Europe. It was founded in 460 BC. The state of the Odrys did not exist long because the Thracian tribes preferred to live individually and thus became an easy prey to the conquerors.

D. gods

Thracians prayed to different gods, but they preferred the Thracian rider with a spear in his hand - depicting it on small stone slabs, and believing that he kept good and man.

E. life after death

They believed that after their death, people moved to another world. So they buried their rulers in tombs that resembled real homes for the dead. In them they placed weapons, ornaments or other items of gold and jewels that the dead would serve in the afterlife, and on the walls painted important scenes of his life. Then they buried the tomb with a lot of earth so that nobody could enter it, and thus mounds appeared in our lands in the middle of the field. They resemble small hills, some of which archaeologists have excavated and picked up the most important objects in the museums.

F. language and writing

According to sources in antiquity the Thracian population was made up of various tribes with its fortresses, its temples and with its priest kings. What they had in common was their language, believes and their spiritual life. The Thracians didn't leave writings and it is thanks to the ancient texts of the Greeks, Romans and Byzantines that we learn about them. In the Iliad Homer talks about the power of the Thracians. Herodotus also emphasizes it in the 5th century BC that Thracians are the most numerous people of all after the Indian people and that if they had been united they would have been invincible and stronger than all other peoples.

G. arts and medical knowledge

Concerning the Thracians arts such as dance, oral poetry or even medical knowledge we only know of this from legends and more recent texts. There is evidence that they used mineral water for healing, herbs, and even surgical instruments. Yoghurt was also used for cure. There were even army doctors. The main ingredients of their medicines were lead, copper and zinc.

Ex.3. Listening comprehension. Listen to the information about the Thracian town of Sevtopolis, nowadays called the Valley of the Thracian kings and fill in with the missing words. (tapescript)

The Thrace society was very *1) totalitarian* ruled by a supreme chief. Bellow him there *2) was the aristocracy*, then the people who created the *3) wealth* for the community. The king had to prove *4) his abilities* every day. The Thracians had kings but no *5) capital*. The best known city was Sevtopolis founded by king Seutus III in the *6) 3th-4th* century BC. Now, it is at the bottom of lake Koprinka. The city was built with a very modern system for the time. The streets *7) intersected* at right angles and had signs. It contained a fortress and a *8) palace*, which also served as a temple. The buildings proof that Traces had higher *9) standard of living*. Here, the culture flourished. The king wore gold and silver *10) armor* and horses were even more richly adorn than people

At the end of the third and at the beginning of the 4th century BC Seutus III the 3rd was *11) buried*. This construction goes back *12) 24 000 years*. Since then, there were *13) devastating* earthquakes at the Balkans – yet the stones are not damaged by any cracks. This proves the exceptional knowledge of the Thracian architects. The ground was covered

with *14) fabric carpet* with gold thread that shined from the distance. A horse was sacrificed in that chamber. The camera symbolizes *15) the earth and sky*.

After – Reading activities

Optional answers:

1. How is Thrace presented?
2. What is Orpheus famous for?
3. Where does the faith in immortality of the ancient Thracians come from?
4. What did king Zalmaxis do?
5. What did the burial mounds symbolize?
6. Who was Trake?
7. Where exactly doe the name of the country come from?
8. Who is the god of the grape harvest?
9. What did Aristotel state about Thracian's wives?
10. What is the name of a famous Thracian gladiator?
11. Where does the name Sredets come from?

Assessment of the lesson

What are the benefits of the lesson?

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No.	question	evaluation			
		poor	satisfactory	good	excellent
1	Do you think that the aim of the lesson was achieved?				
2	Was the timing enough?				
3	Were the activities motivating for the students?				
4	Was the lesson interactive?				
5	Do you think the lesson helps the students improve the specific vocabulary on the lesson topic and knowledge in English?				
6	Do you think the lesson helps the students improve their skills				
A	Reading				
B	Listening				
C	Speaking				
D	Writing				

Ideas for improvement in the Teacher's book after each lesson.

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Lesson 5 – Women in the First World War

INTRODUCTION

The First World War was an event that changed the history of Europe. The following teaching unit aims to make students reflect on the social and cultural changes that the war caused in Europe at the beginning of the twentieth century.

LESSON: History

PRIOR KNOWLEDGES:

1. The first world war - social and cultural changes in the women.

COMPETENCES:

2. To observe and understand simple texts, historiographical documents and sources.
3. To use the sources for understanding the historical facts.
4. To identify in an historical event the action of different historical entities.
5. To understand causes and effects in historical facts.
6. To improve the use of a foreign language.

ABILITIES:

1. To read and evaluate different sources.
2. To use historical vocabulary.
3. To locate facts and phenomena in the right temporal and spatial dimension.
4. To use English in a subject of study.

TIME AVAILABLE: 6 hour

FORM OF STUDENTS: 7th grade students age level of English

MATERIALS AND EQUIPMENT:

- text book;
- interactive whiteboard;
- pencil;
- computer.

METHODS:

- learning by doing;
- problem solving;
- cooperative learning.

STAGE 1 (10 minutes)

The teacher divides the class into work groups and assigns them the documents and activities.

Resource n. 1

Activity n. 1

Look at this picture and answer the questions.

1. What are women doing in this picture?
2. Where are they?
3. Why aren't men there?

Suggested answers:

1. Women are building weapons.
2. Women are in a weapons factory.
3. Men are not in the factory because they started on the war front.

Resource n. 2

Activity n. 2

1. What is the woman doing in this picture?
2. Who is the figure at the top left?
3. This is a honor certificate given to a woman for her work in the fields. Why is this merit acknowledged to woman?

Suggested answers:

1. The woman is plowing a field.
2. The figure at the top left is a soldier: he can be her husband, her brother or her father.
3. The woman had this certificate of honor because she had been rewarded for replacing a man in hard work like working in the fields.

STAGE 2 (2 hours)

The class is divided into groups, the same groups as the previous lesson, then the teacher gives the students some pictures and some posters from the First World War. The teacher Inserts a copy in the class library of the e-learning history course (e-learning platform: easyclass.com). Finally the teacher provides a series of questions and a table with multiple entries. Students answer group questions and compare results with other groups. They take note of the discussion and at the end each group writes a brief report.

Activity n. 3

1. After looking at photographs and posters, you make a list of tasks women that they had during the First World War.

Suggested answers:

Tasks and works	Photographs	Posters
Women do men's jobs	n. 2, 10, 12	n. 1, 5, 7
Women work for weapon factories	n. 11	n. 1, 6
Women fight in the army	n. 6, 8,9	n. 9 – 10

Women help soldiers: they are nurses in military hospitals or they bring food to the front	n. 1, 3, 7	n. 3
The women silently accept the departure for the war of their husbands, brothers and fathers	n. 5	n. 2 – 4
They protest and demand equality from men	n. 4, 9	
Women are encouraged by society to do their housework and the work of men well	n. 10, 12	n. 1,5, 6, 7, 8

2. How are women represented in advertising posters?

Suggested answers:

Women in posters are strong, patriotic, generous, they are examples to imitate for society. Women are depicted as they work, greeting husbands and boyfriends who leave at the front, while they are helping the wounded. In some posters women wear military uniform or hold a gun in their hands.

3. Can you see differences in women's tasks in different photos? What differences do you see?

Suggested answers:

Women in many photos are proud of doing men's work. They smile while men are leaving for the front, while they are helping men. But in the photos where some suffragettes are portrayed they do not smile and seem to denounce the difficult condition of women.

Activity n. 4

Collective discussion on documents and comparison on information

Activity n. 5

The teacher forms four new working groups and guides students to do a web search on the condition of women during and after the First World War. The teacher invites the students to formulate some hypotheses on the changes in the female conditions during and after the First World War. Students write a short written report at the end of the presentation and discuss the various group hypotheses.

Example of a short report:

During the First World War women worked in place of men. They often did hard jobs: they worked in the fields, worked in arms factories, drove trains or trams. Some women helped soldiers in military hospitals or brought food into the trenches. States encouraged their work in propaganda and asked them to accept that situation. The change in the roles of women made them more aware and strong, so in England the suffragettes protested to get the same rights as men because they worked as men and sacrificed for their country.

Resource n. 3

Photographs of the First World War

1

2

3

4

5

6

7

8

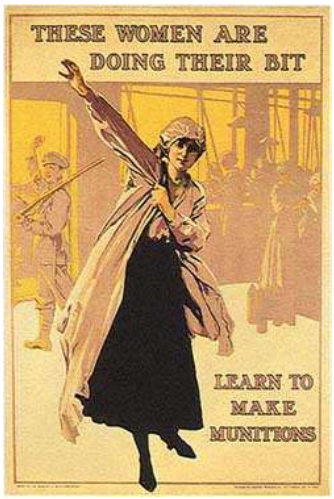
9

10

11

12

Advertising posters



1

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STAGE 3 (3 hours)

The teacher inserts the following historiographical texts in the e – learning course library. She reads the first text and then she formulates the problem: Was the war an important moment for the independence of women?

The teacher asks to groups to read all the texts and then she asks to each of the students to answer the question briefly, explaining the causes of the change in the social role of women in Europe. Finally, the students respond to questions of comprehension and carry out the final satisfaction test.

Activity n. 6 front lesson and reading of the following text

THE FIRST WORLD WAR

NEW ROLES AND NEW WORKS FOR WOMEN

At the beginning of the twentieth century, women were completely submissive to their father or their husband. Their condition was different in the various social classes. The middle classes women were wives and mothers, and were engaged in the education of the children and the management of the house. They performed female professions before marriage. Women in the working class worked as nanny in the rich families or in the factories as subordinate workers. The consent of her husband was indispensable to carry out a professional activity.

All over Europe before the war there were struggles to get rights to women. The "suffragettes" were the middle class women who fought for the right to vote with passive resistance, hunger strikes or disturbing official demonstrations. They fought for the right to equal education, employment and salary between women and men.

In 1914, women were everywhere without the right to vote and they had not a political role and could not to say their political ideas. There were few women who asked to governments to stop the call to arms. Among them: Italians Linda Malnati and Carlotta Clerici, who participated in the "Pro-Humanity Committee" to form an Italian League for Neutrality, and Austrian Marianne Hainisch, who was the leader of the Peace Women's Associations in Austria.

During the First World War, men left for the forefront and women replaced men.

Question n. 1: Was the war an important moment for women's independence?

The Great War needed the help of women.

Italy was still an agricultural country in the twentieth century, women replaced men in agricultural work with older people, men and women. It was especially hard for them to work in the fields. Women during the war were forced to do all the farm work, such as moving grain bags, dealing with livestock and using agricultural machinery. They also took care of the sale of livestock.

These women were so efficient in agricultural work that agricultural production during the war did not diminish.

Even in the northern factories, the number of women grew. The poorest workers did a hard job. In industry and commerce they washed in terrible conditions, did not rest on Sunday, worked thirteen hours, often suffered accidents, illnesses or spontaneous abortions.

There were also women who took part in the war pretending to be men like Luigia Ciappi and Gioconda Sirelli.

In **France** women were employed by banks, public transport and were also porters and tram transporters. In 1915, industrialists began to use women. They had various tasks in the war industry. The most important activity was the production of ammunition.

In **Germany**, home work was re – converted into war production. In the Black Forest, ammunition, tents and cookie boxes, gas masks, footwear and complete uniforms were

produced. Unions and employers at the time of recruitment had the women sign a letter of resignation to be used in the future.

Many women used poisonous chemicals that often caused health problems. The explosives factories were constantly at risk of accidents. The biggest disaster occurred in the munitions factory in Wöllesdorf, **in Austria**. The explosion had devastating effects, causing the death of nearly 500 workers.

In Austria-Hungary, girls and women were employed at the front to cross hidden enemy lines and to gather information. Many girls were employed as militarized workers.

In England in most professions agreements were entered without the participation of women's unions and women were fired at the end of the war. They were employed in munitions factories, transport and banks. In the spring of 1917 they created an auxiliary corps of the female army (WAAC), which in November 1918 was 40,000 women, including 8,500 abroad. The war office hoped to control women's organizations. He sent the first recruits to France, as prostitutes, employees or mechanics, and then created two female services in the Navy and in the Aviation.

The WAAC women were accused of dishonoring the monarchy uniform, because they imitated men.

The WAAC women were considered immoral and often homosexual. A discouraging commission of inquiry, created in 1918, failed to erase the bad reputation of WAAC women.

Also on the **Eastern front**, women participated directly in the conflict, serving in auxiliary army formations, especially in livelihoods and medical services. In Poland, during the war, many women served in the Legions and in the Polish military organization.

In August 1914, in the paramilitary forces of the Kingdom of Poland and Galicia, there were 300 "riflemen" belonging to the female branch of the ZS - "Association of Riflemen" and the PDS - "Poles Fucilieri" - under the command of Janina Antoniewicz. The presence of women was particularly important in the formation of the first Polish army. Their first job was to contribute to the supply of Polish fighters. The women also ran field kitchens and infirmary in the main barracks. They also had to maintain communication between commands and perform administrative and office tasks.

They also collected donations for future Polish troops. Women were also used in espionage. The commander of a Legion, Jozef Pilsudski, opposed the female front line, but eventually accepted their use in espionage and founded a health unit under the command of Zofia Dobijanka. When, on September 8th,1914, the Legions passed under the Austrian command, Pilsudski ordered the withdrawal of women from military units. Despite this ban, in 1915 – 1916 there were cases of women on duty pretending to be men in the Polish legions.

Heroines

Flora Sandes should be remembered among women who, as true heroines, fought in the First War. Initially she was a volunteer in the British Red Cross and worked in Serbia at the second infantry regiment. She was the first woman to be nominated as an officer of the Serbian army and the first English woman to be officially recruited as a soldier.

Another courageous woman was the Austrian **Victoria Savs**, who grew up between Arco (Trento) and Merano (Bolzano). In 1916 and 1917 he fought on the front line of the Tre Cime

di Lavaredo plateau. But she was wounded, she lost a leg, so it was discovered and left the military front. But she was then rewarded with a silver medal for military valor.

The Austrian **Alice Shalek** even if not fought on the military front, was present on the battlefield as a journalist, photographer, writer and the only female reporter during the Great War. He came from a Jewish family from the middle class in Vienna and became a war correspondent. He was sent to gather information and write reports on the battlefields in Serbia, Galicia and on the front of the Tyrol. His reports and his photos have been collected in the book "Ab Isonzo".

The **carniche bearers** were also true heroines, they were women who during the trench war, on the Carnic front, who brought clothes and ammunition to their men. These women, after having spent a whole day working in the fields, taking care of their children, carried loads of 30 – 40 kilograms. They have faced cold and snow, walking for hours and reaching peaks over 1000 meters.

Many women were nurses and followed combat troops in field hospitals and often lived in very difficult conditions.

There were also medical women, such as **Countess Maria Des Fours - Walderode** and **Countess Lucy Christalnigg**, a Red Cross collaborator who was one of the first women victims of the war in 1914. She wanted to bring an ambulance to Gorizia, but her journey was not communicated. When the ambulance approached the block station without stopping, the guard's soldier fired and killed the woman on the spot.

The Intellectual women during the war

There were numerous intellectual women who in their writings told the war or disagreed with their humanitarian efforts. **Stefania Türr**, daughter of a courageous Hungarian official, founded the Association of Italian Mothers to protect war orphans. She went to the military front and was one of the first women to write from the trenches.

Among the many writers there was also an American **Edith Wharton** who created workshops for unemployed workers. Edith later went to the battlefield to watch the conflict, report to US

newspapers, and push the United States into war. In France he also created the first "American refugee hostels" to help people escape the conflict from Belgium and northeastern France, he invented one of the first modern models of humanitarian intervention.

Important is the role of some women scientists like **Marie Curie**, helped by her daughter, who has imposed the application of radiographic investigations to war surgery and created vehicles equipped with radiological equipment.

Spy Women

Some special women, full of passion and rebels, were recruited as spies during the First World War. Women who used their charm as a weapon against men. Among the most famous spies were: **Mata Hari**, the legendary dancer suspected of espionage by the French secret services and condemned as a traitor; **Gertrude Bell**, the archaeologist, politician, secret writer and secret agent of Britain, and the only woman to join - together with Winston Churchill and Lawrence of Arabia - the founding of the trans-Jordanian states and Iraq during the Cairo Conference of 1921. History has judged them. Many spy women died for their country, some for old age after completing the most adventurous chapters of their lives, others were killed by disappointed lovers.

Conclusion

After the war, many women returned to care for children, husbands and home, but many of them showed to society that they were able to do the same things as men, began to practice free professions, changed their clothes, and their daily lives. The struggle for female

emancipation was long but the terrible experience of war showed that their place in society could change.

Activity n. 7

Example of a short report

Women after the First World War became freer. They had learned to do the work of men and felt equal to men. They had become strong and sure of themselves. Many women like suffragettes fought for women's rights. Many other women had fought in the army, had been spies and had sacrificed their lives for their country as men. Their tasks could no longer be those of the past, they could do other things and not just take care of their daughters and do housework. They had become together with the men protagonists of that historical period.

Activity n. 8

Comprehension exercises

No.		T.	F.
1.	The Italian women during the First World War worked only in fields		x
2.	Many european women during First World War replaced men in many jobs	x	
3.	In France women created a WAAC		x
4.	In Poland during the First World War many women served in the Polish military organization	x	
5.	Stefania Türr was a young German spy		x

6. Who are the carniche bearers?
7. What Jobs did the women do during the First World War?
8. What was the "American refugee hostels"? Who created it?

Suggested answers:

6. The carniche bearers were Italian women who carried ammunition and clothing to soldiers on the battlefield. They walked for hours in the cold to reach the soldiers at the top of the mountains.
7. Women during the First World War worked in the fields as peasants, as workers in munitions factories, as nurses in military hospitals and some women were soldiers and spies.
8. The "American refugee hostels" was the first modern models of humanitarian intervention. It was a place where the people found refuge from the war. It was created by Edith Wharton.

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a)speaking skills?				
b)writing skills?				
c)listening skills?				
d)reading skills?				

Lesson 6 – Neolithic Revolution

INTRODUCTION:

Neolithic means "new stone". However it was not just the technology of stone instruments which was new. There were other important changes.

In Palaeolithic times, people relied on hunting and gathering, and had less food in winter. In the Neolithic Age, human beings learned how to domesticate animals and cultivate plants.

The discovery of agriculture took place about 11,000 years ago. Human beings observed that plants grew when seeds fell on the ground. This is how agriculture started. Cereals were cultivated:

- Wheat was cultivated in the Middle East and Europe.
- Rice was cultivated in Asia.
- Corn was cultivated in America.

In this period goats, sheep, oxen, horses and dogs were domesticated.

Animal raising and agriculture made it possible for people to settle in a particular area. When they had enough food, they started to store it. They became sedentary and built villages, generally located near rivers. This series of changes is called the **Neolithic Revolution**.

A Neolithic village

Lesson: Social Sciences (History)

Objectives:

1. Students will be able to define complex terms: revolution, domestication, Neolithic Age, subsistence.
2. Students will discuss how the Neolithic Revolution led to permanent settlements.
3. Students will compare and contrast human lifestyles in the Paleothic & Neolithic Ages.
4. Students will analyze humans as a major factor of change in nature, from the agricultural revolution onwards.
5. Students will be able to develop their logical thinking and problem solving skills and increase their intelligence.
6. Students will develop their skills in working on their own, and in groups.

Time available: 55 minutes (1 hour)

Form of students: ESO 1st grade / students age: 12-13 years / level of english: A2/B1

Prior knowledge: The students should already know (that):

1. paleolithic way of life;
2. historical sources of information (types);
3. some basic ideas about Evolution Theory ideas.

Materials and equipment:

- smart board;
- board;
- pencil;
- paper.

Methods:

- learning by doing;
- video analysis;
- debate;
- reading;
- image analysis;
- writing.

Stage 1 (5-10 minutes)

1. What was the way of living in Palaeolithic times?
2. How do we know about prehistoric times?
3. Can you think of some changes in Nature through time?

4. Have you ever come across the word "revolution"? What do you understand by revolution?
5. Could you name any revolution in human History?

Suggested answers:

1. They mainly lived from hunting, fishing and gathering wild fruits. They were nomads, changing place from time to time. They lived in caves, where they painted animals on the walls.
2. Studying the material remains of the period using the archaeological science. We cannot use writing sources because there was no writing in Prehistory
3. The climate, the coastlines, the rivers, the mountains, some species have dissapeared through time, … .
4. A very big change. A moment (or period) in history, after which almost everything has changed.
5. French revolution, Industrial revolution, Russian revolution, digital revolution, transport revolution, agricultural revolution, Glorious Revolution, American revolution, etc.

Stage 2 (30 minutes)

The students sit in pairs. They work individually during this activity. The students will read the text on the neolithic revolution, and after that, they will watch a four minute video on the same subject (https://www.youtube.com/watch?v=teavjYI9pdM). Students will watch the video twice, the second time with English subtitles. They can take notes as they watch the video.

After the reading and the video watching, the teacher tells the students:

1. Each student must draw a table with the differences and similitudes he/she can recognize between the Palaeolithic (taking into account their previous knowledge on this) and the Neolithic ways of life. Students must draw a three columns table in which the first is for the different aspects that feature the life in the Paleolithic Age (second column) and the Neolithic Age (Third Column). As an example, say the students about "economy" (from predation to production of food).
2. After ten minutes, once the tables are ready, the students must compare their tables in pairs, by asking question one to the other about the different features they have written down in their tables.
3. Finally, the students, in pairs, will try to draw an outline of the sequence of changes happened in the neolithic revolution, trying to create a chain of causes and consequences.
4. Two, or three, students, one by each pair, will be asked to stand up and explain to the rest of students the outline produced.
5. A short debate can follow, provided there are differences in the outlines presented.

Suggested Features Table:

Feature	Paleolithic Age	Neolithic Age

Stage 3 (10 minutes)

Life in a Neolithic village

Most villages were next to rivers and encircled by a fence which protected them from animals and other human beings. They had animal pens for the animals and storehouses for grain.

There were three important technical changes during this age:

- They started to use polished stone to make tools: hoes, sickles and mills.
- They started making textiles using thread or wool from their animals.
- They invented pottery. They used clay vessels to store cereal and bowls to eat and drink.

Work became specialized in the villages. Some people worked the land, other people raised cattle, and the rest were artisans.

The students sit in pairs. They work individually during this activity. The students will read the text on the neolithic village,

After the reading, the teacher tells the students:

6. Look at the picture of a Neolithic village for a couple of minutes. Then, tell your partner student about the way of life in a Neolithic village.
7. Write down in a piece of paper, discoveries and technical changes that happened in the Neolithic Age.
8. After writing down discussing some of them with your partner.

Stage 4 (Homework)

Human as a force of change in nature: selective breeding in plants.

At home, watch this video on man-made fruits and vegetables, and write a short composition about those changes and the cause of them. Use at least three plants from the video to comment on in your compositions (100 words).

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Lesson 7 – World War I

Subject: History

CLIL Unit: World War I

Objectives:

1. Learn the development of WWI and recognize the historical importance of this.
2. Identify in space and time the countries in conflict and main events that happened in WWI.
3. Know specific vocabulary of the unit
4. Delve into little – Known aspects of WWI like important role of women or psychological consequences of soldiers.

Methodology:

In this unit students works in Listening, reading, speaking and use of new technology in research information.

Age/level of students: Fourth ESO level/ 15 – 16 years

Material and equipment:

- digital board;
- computers.

Temporality:

About an hour divided in differents stages.

Stage 1 (20 minutes)

Introduction

The teacher explains the start of War and a brief development of this across the time using maps, pictures and other resources to help. Then the students have to do task 1 to define important vocabulary words of the unit.

Stage 2 (10 minutes)

Place in space and time the main events of WWI

Every student has a blank map of Europe in 1914, 6 press clippings with war news and a Timeline. Then they have to make the Task 2 and 3.

Stage 3 (15 minutes)

Reading activity.

Read the article about women in WWI and do task 4.

Stage 4 (15 minutes)

Listening activity.

Watch the video and then do Task 5 about "Shell Shock".

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Did you learn new things during the lesson?				
2. Did you have enough time to do the activities?				
3. Were the activities interesting for you?				
4. Did you take part in the lesson?				
5. Did the lesson help you improve your vocabulary on the topic?				
6. Did the lesson help you improve your				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Unit 2 – IT

Lesson 1 – The Internet

School subject – IT

Topic – THE INTERNET

Aims:

1. To increase student's knowledge of subject content.
2. To develop student's knowledge of content related lexis.
3. To develop all four language skills (listening, reading, speaking, writing).
4. To provide material and information for further topic and language based studies.
5. To raise students interest in the benefits of using Internet as communication and information resource and how to do it safely.

Age group – Teens

Level – B2

Time – 40 minutes

Materials:

- CLIL lesson worksheet;
- interactive Digital Board;
- multimedia;
- demonstration materials.

Introduction

This topic and accompanying tasks/activities offers the teachers and students the opportunity both to develop content and language knowledge at an appropriate depth over a single lesson or a series of class hours. It aims to develop student's vocabulary about some notions of international importance, some specifically IT and technological vocabulary, to deepen the knowledge about the specific issue – internet and all the terms related to it, to extend the knowledge that students have so far, to learn useful and practical information. It also aims to clarify some international standards and internationally used terms. We also intend to find some similarities between the native language and the English language and to enlarge the knowledge about the English grammar and vocabulary.

Content objectives

With the completion of the unit students will be able to:

1. learn some new words and terms and new content about the Internet;
2. know more about the types of internet connections, the speed you need according to what you intend to do, browsers, search engines etc.;
3. understand better some notions, terms and texts;

4. relate the vocabulary and information in the form of new knowledge and skills, which will be used for further, more advanced development;
5. define internationally used terms;
6. characterize with ease the read in the text thanks to the more detailed activities in the unit;
7. use more advanced information Internet.

Language objectives

Language obligatory:

Students will

1. acquire key vocabulary;
2. learn new words and notions of international importance
3. find the most suitable meaning of the words in their mother tongue;
4. use more advanced grammar structure – gerund, infinitive.

Language compatible:

Students will be able to:

1. Understand the language of describing, defining and explaining the internet terms and notions.
2. Understand more specific vocabulary thanks to content.

Instructional strategies

Brain storming: Useful to give us indicator of their previous knowledge and start grouping the necessary vocabulary in Semantic fields.

Cultural objectives

Students will:

1. be conscious of the influence of the invention of the Internet for our everyday life, for our education, cultural and scientific development;
2. understand more aspects of the topic;
3. become aware of the importance of knowing how to look for information in order to improve their everyday life.

Making connections

Cross curricular extensions

All subjects - Internet is an endless source of information

Assessment:

- everyday observation;
- development of the proposed activities;
- vocabulary and Grammar Assessment ;
- content Assessment.

Procedure

LEAD – IN OR PRE-READING ACTIVITIES (7 minutes)

Routine activities – checking the register, student's HW and defining the topic.

The teacher asks the students How many types of Internet service do they know? Can they name them? How do they function? After brainstorming the topic, students are going to watch short video (3,8 min) giving the answers of the questions.

https://www.youtube.com/watch?v=hMX6dVa61t0

WHILE – READING ACTIVITIES

Task 1. Reading and learning new information **(8 minutes)**

Ex.1. Read the text and word bank. After that translate the words from the work bank into your language. Thus, they will drill again the new content and vocabulary.

Task 2. Choose the best word from each pair in grey type. **(5 minutes)**

Students will extend their knowledge learning what is the difference between the Web and the internet. They will also extend their English vocabulary choosing the correct option. This way they will develop their language and content knowledge simultaneously.

Internet browsers and search engines

Task 1. Match the browser toolbar button with the function – the aim is that students clarify what they know, make difference between browser and search engine, improve their knowledge of using different software applications. **(4 minutes)**

Task 2. Do you know the answers of these technical questions about browsers? Answer true or false for each one – we intend to deepen student's knowledge and drill their grammar. **(4 minutes)**

Task 3A. Using a search engine. Put the words into the spaces – gap filling activity in which students have to use the new vocabulary, improve their vocabulary skills and at the same time learn more content about search engines. **(4 minutes)**

Task 3B. Logical operations. You can refine your search by using logical operations. Match the search engine instructions with the matches – how to improve the search for new information – ideas. **(4 minutes)**

AFTER – READING AND LISTENING ACTIVITIES

Task 1. Match the activities with the internet features. – how to use the net **(5 minutes)**

At the end of the lesson students will have practiced the 4 skills, learning new information and useful facts about Internet!

FOLLOW – UP ACTIVITIES – HOMEWORK (3 minute) to give instructions for the next lesson

Vocabulary extension – HW -ICT: Task – What can we use Internet for? Analyze the mind map to learn new terms, vocabulary and useful information using internet recourses – online dictionaries, encyclopedias etc.

Prepared by Tanya Lalkova – Ivanova and Ani Andreeva

ANSWER KEY

Pre – Reading and listening activities

Task 1. - the answer is written in the text below

While reading activities

Task 1. – each country translates it into their language

Task 2. Choose the best word from each pair in grey type.

1 network, 2 over, 3 servers, 4 access, 5 provider, 6 discussion

Internet browsers and search engines

Task 1. Match the browser toolbar button with the function.

No.	Browser toolbar button	answer	letter	function
1	Back	1c	A	Shows a list of the websites you have visited recently.
2	Forward	2f	B	Opens the media bar, accessing internet radio, music, video etc.
3	Stop	3i	C	Displays the page you were on before.
4	Refresh1 / Reload2	4d	D	Shows the latest version of the page.
5	Home	5g	E	Opens the search panel.
6	Search	6e	F	Displays the page you were on before using the Back button.
7	Favourites1 / Bookmarks2	7j	G	Displays the page you have set as your home page.
8	Media	8b	H	Prints the current page.
9	History	9a	I	Stops a page from downloading.
10	Mail	10k	J	Displays the web addresses you have chosen as your favourites.
11	Print	11h	k	Shows email options.

Task 2. Do you know the answers to these technical questions about browsers? Answer true or false for each one.

1. False. They are similar, but there are some minor differences.
2. True
3. True

4. False – they can be deleted (in Internet Explorer, go to Tools/Internet options/Delete files).
5. True
6. True
7. False – Many are advertisements, but information about program updates etc., is also sometimes displayed as pop-ups.
8. True

Task 3A. Put the words into the spaces.

1. keywords
2. matches/database
3. returns/hyperlinks
4. sponsored
5. click on/view
6. refine/criteria/media

Task 3B. Match the search engine instructions with the matches

1. 1b
2. 2a
3. 3d
4. 4c
5. 5e

After reading activities

Task 1. Match the activities with the internet features.

No.	activities	answer	letter	internet features
1	Keep a public diary of your journey through South America	1f	A	webmail
2	Lose lots of money	2j	B	online music store
3	Find out about the First World War	3g	C	instant messaging
4	Download songs	4b	D	online radio
5	Listen to music in real time	5d	E	portal
6	Check your email from any computer	6a	F	blog
7	Find links to other websites	7e	G	online encyclopedia
8	Exchange messages in real time with friends or colleagues	8c	H	currency converter
9	Check the latest exchange rates	9h	I	e-zine = magazine
10	Read new articles about a subject that interests you	10i	J	online casino

HW – an activity which aims the broadening of student's knowledge on ICT by using online recourses.

Assessment of the lesson

What are the benefits of the lesson?

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No.	question	evaluation			
		poor	satisfactory	good	excellent
1	Do you think that the aim of the lesson was achieved?				
2	Was the timing enough?				
3	Were the activities motivating for the students?				
4	Was the lesson interactive?				
5	Do you think the lesson helps the students improve the specific vocabulary on the lesson topic and knowledge in English?				
6	Do you think the lesson helps the students improve their skills				
A	Reading				
B	Listening				
C	Speaking				
D	Writing				

Ideas for improvement in the Teacher's book after each lesson.

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Lesson 2 – How to use PowerPoint

INTRODUCTION:

PowerPoint is a computer program that allows us to create and show slides to support a presentation. Text, graphics and multi – media content can be combined to create professional presentations. As a presentation tool PowerPoint can be used to:

- organise and structure your presentation;
- create a professional and consistent format;
- provide an illustrative backdrop for the content of your presentation;
- animate your slides to give them greater visual impact.

PowerPoint has become enormously popular. Learning to present with PowerPoint will increase the opportunity for the students to prepare good presentations both during their high school time and university years. Knowing to use it will also increase the likelihood to be employed after university as it is the world's most popular presentational software. Used well, PowerPoint can improve the clarity of the students' presentations and help them to illustrate your message and engage your audience.

Lesson: ICT

Objectives:

1. Students will be introduced to use the Power Point Program.
2. Students will learn how to use the basic features of the Power Point Program.
3. Students will learn how to make a basic slide show.
4. Students will create a presentation to introduce themselves and present it in the classroom in English.

Time available: 80 minutes (2 hours)

Form of students: 9th grade students age level of English

Prior knowledge: The students should already know (that):

1. to use basic programmes on computer;
2. to be able to introduce themselves in English.

Materials and equipment:

- computers with the Power Point Program on it;
- students' photos of themselves/family/friends in memory cards.

Methods:

- learning by doing.

PROCEDURE:

Stage 1 (10 minutes)

The teacher develops a simple way of showing the students how to use the Power Point Program by example of demonstration from himself/herself which he/she prepared beforehand.

Stage 2 (20 minutes)

Students get together and learn the basic command features of Power Point in pairs. (The teacher can suggest them to use the link: https://www.slideshare.net/joluisae/how-to-create-a-basic-power-point-presentation. Then they review what they learned by showing the teacher the basic commands. This is necessary for the students to memorize basic features so they may refer back to these skills later on in the class. The teacher makes sure that he/she sees what each pair does.

Stage 3 (10 minutes)

As an example, the teacher shows the students how to create a basic slide show using his/her own or a pre – made template pointing out the basic features once more. Again students need probably to refer to this when they begin constructing their own presentations

Stage 4 (20 minutes)

Students should now be able to use the Power Point Program and test it by creating their own Presentation. The teacher gives them some time to create their own presentation by using the photos they have taken in their memory cards. The teacher observes the students during their preparation. After the time ends, the students check their presentation in pairs and give feedback to each other. The students make the final corrections.

Stage 5 (20 minutes)

After the students have finished typing, the teacher checks to make sure the format is correct. Then the students show their presentation to the whole class and present it in front of their classmates.

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Unit 3 –Civil Education

Lesson 1 – Identity Card of the European Union

European Citizenship – The European Union

KNOWLEDGE: you will know the meaning of:

1. The international organization of the European Union (historical origins, objectives).

ABILITIES: you will know how to analyze, to distinguish and to compare:

2. the origins of the European Union;
3. the competences of the EU;
4. to improve the use in foreign language.

COMPETENCES: you will be able of:

1. to understand the importance attributed to the relationship among States;
2. to analyze and to understand the role of the UE;
3. to use English in a subject of study.

TIME: 60 min. for each lesson

CLASSE: III section B

STUDENTS: 20

Materials and equipment:

- text book;
- interactive whiteboard;
- pencil;
- globe.

Methods and procedure:

- learning by doing;
- research;
- debate.

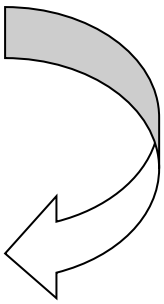
UNIT 1 – Identity Card of the European Union

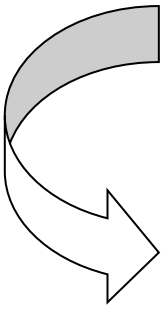
The role of the European Union

The European union is one of the most important **International Organizations, with** competences in economic, social, environmental subjects, of public order, safety and defense.

It is composed of **28 States members** that have signed the Essays of adhesion, in order to achieve the common objectives and to respect the rules.

The European union cooperates in field





ECONOMIC

- It establishes politics common to all Member States;

- It recognizes and it protects the principles of:

- free competition between firms,

- free movement of people, goods and services in the European market.

EXTRA ECONOMIC

- Peace, defense, justice, safety, solidarity.

- Protection of the environment and of cultural heritage,

- Quality of life,

- Development and progress in social, technological and scientific field.

TASK 1. (reading skills) **(10 minutes)**

After reading the previous text, answer to the following questions:

1. How many states members has the European Union?

2. Is the EU an organization with economic and extra economic aims ?
3. Is it also interested in the safety, environment, sustainable development, and in the guardianship of the human rights?
4. What is the currency of the European Union?

Suggested answer:

1. The European Union has 28 State Members.
2. Yes, it is.
3. Yes, it is.
4. The currency of the European Union is Euro.

The Origins of the European Union

The idea of giving life to United Europe dates back to many centuries ago: nevertheless its realization started only during the fifties of last century.

In **1951** Belgium, France, Germany, Italy, Luxemburg and Netherlands founded with the **Essay in Paris** the **Ceca** (European Community of the coal and the steel).

In **1957** the six members states established with the **Essays in Rome** the **Cee** (European economic Community) and the **Mec** (European economic Market).

In **1973** the success of the European Economic Community convinced three new States to join: Denmark, Ireland and United Kingdom (the latter has begun the **Brexit** or the procedures to go out of the Union; they will conclude it in 2019).

In **1979**, the citizens of nine States members elect, for the first time, by direct universal suffrage, their representatives at the **European Parliament** of **Strasburg**.

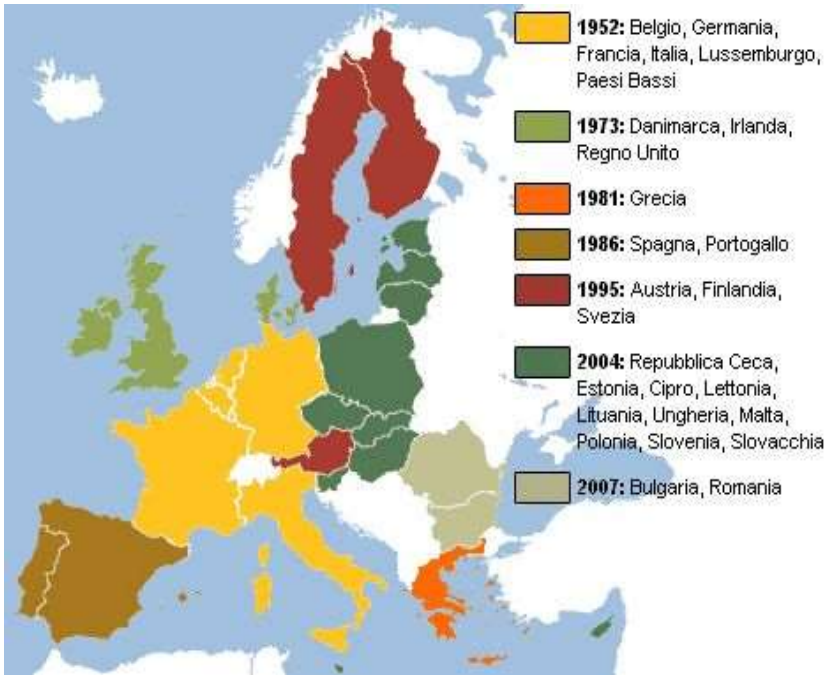
In **1981** also Greece joins the European union and, in **1986** Portugal and Spain.

November 1st 1993 goes into effect the **Essay of Maastricht** and the European Union (UE) was born, that has vast competences and a more concrete political structure in comparison to the Cee.

In **1995** Austria, Finland and Sweden and on **May 1st 2004** Cyprus, Estonia, Latvia, Lithuania, Malta, Poland, Czech Republic, Slovakia, Slovenia and Hungary joined the UE.

January 1st 2007, from the participation of Romania and Bulgaria, the European union enlarges and from **January 1st 2013** Croazia becomes a member.

They create, in this way, the conditions for a great **Integration** among the States members, in order to reach the concrete realization of a real economic and monetary Union (**Uem**), with the introduction from 1st January 2002 of an European unique currency: the **Euro**.



TASK 2. (writing skills)**(10 minutes)**

Complete the sentences:

1. The European union is:

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2. The Ceca is:

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3. The Cee is:

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4. The Mec is:

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5. The Uem is:

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Suggested answer:

1. The EU is an economic and political union between 28 European countries, it is one of the most important International Organizations with different competences.
2. The C.E.C.A. is a European Community of the coal and the steel, it was founded with the Essay of Paris in 1951.
3. The C.E.E. means European Economic Community, it was founded in 1957 by six members states established with the Essays in Rome.
4. M.E.C. means European Economic Market.
5. U.E.M. means Economic and Monetary Union,), it has introduced, from 1st January 2002, an European unique currency: the Euro.

TASK 3. (listening skills) **(5 minutes)**

Cross if the sentence is true or false.

	True	False
1. The origins of the European Union dates back to the sixties of last century.	☐	☐
2. The Essays that founded the three European Communities were signed in Rome and Paris.	☐	☐
3. The first states members were nine and they are twenty-eight now.	☐	☐
4. The objectives of the UE are only economic.	☐	☐
5. The Uem was created in 1992.	☐	☐

Suggested answer

1. False
2. True
3. True
4. False
5. False

TASK 4. (Speaking skills)**(5 minutes)**

In summer you decide to go to improve your English in Malta where, besides frequenting the course, you can also spend pleasant days on its beautiful beaches.

REPLY ORALLY TO THE FOLLOWING QUESTIONS:

1. Is Malta a State member of UE?
2. Do you know what is the currency of Malta?

Suggested answer:

1. Yes, it is.
2. The currency of Malta is Euro.

TASK 5. (Cooperative skills)**(30 minutes)**

With three other friends, make a conceptual map of Unit 1. (Use the web, images and personal experiences.)

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a)speaking skills?				
b)writing skills?				
c)listening skills?				
d)reading skills?				

Lesson 2 – The Institutions of the European Union

European Citizenship – The European Union

KNOWLEDGE: you will know the meaning of:

1. The international organization of the European Union (organs and acts).

ABILITIES: you will know how to analyze, to distinguish and to compare:

1. the powers, the functions and the composition of the European Union;
2. the different acts of the right of the European Union;
3. to improve the use in foreign language.

COMPETENCES: you will be able of:

1. to understand the importance attributed to the relationship among States;
2. to know its principal organs and what acts it emanates;
3. to use English in a subject of study.

TIME: 60 min. for each lesson

CLASSE: III section B

STUDENTS: 20

Materials and equipment:

- text book;
- interactive whiteboard;
- pencil;
- globe.

Methods and procedure:

- learning by doing;
- research;
- debate.

UNIT 2 – The Institutions of the European Union

The functioning of the European Union is complicated. The EU, in fact, has very ample competences, in order to guarantee the cooperation among States with different languages and traditions.

To allow such improvement, the EU is endowed with special organisms: the European Institutions.

The principal European Institutions are:

The European Parliament that is the legislative and control organ, together with the Council of the European Union. It has its seat in Strasbourg, France. It represents over 490 million citizens of the EU. The current President is Italian, Anthony Tajani, in charge from January 17th 2017. He is the fifteenth president of the Parliament since the meeting is directly elected by the citizens.

The members of the European Parliament are chosen every 5 years from the adult citizens of every State (in Italy men and women of more than 18 years old).

The functions of the Parliament are:

1. it approves the laws;
2. it checks and it approves the Economic Budget;
3. it controls the European Commission.

The Council of the European Union or Council of the Ministers formed by 28 representatives for every belonging State. It has its seat in Bruxelles, in Belgium.

Its functions are:

1. it manages the legislative power;
2. it undersigns International Treaties;
3. it approves the Budget of the UE;
4. it has functions of coordination the various Institutions.

The European Council has the task of empower the politics of the European union. It is presided by a President in charge for 2 years and a half with the assignment of guaranteeing the preparation and the continuity of the work of the European Council.

The European Commission that is the executive organ.

Its functions are:

1. it carries out the Essays;
2. it formulates proposals in legislative subject;
3. it sets up and manages the Budget of the European union.

The European Commission must have the trust of the European Parliament that can revoke it with an Action of Censorship.

The Court Of European Justice that is the judicial organ, has its seat in Luxemburg.

Its functions are:

1. it monitors in the respect of the Treaties;
2. it is responsible to solve the controversies caused by the non-observance of the laws of the EU.

There are other smaller Institutions and they are:

The Court Of Auditors that verifies that the community Funds are spent in a regular way and are destined to the right purpose.

The BCE (European Central Bank) with seat in Frankfurt is responsible of the management of the Euro. Its principal assignment is to guarantee the stability of the prices.

TASK 1. (Reading skills) **(10 minutes)**

After reading the previous text, answer to the following questions:

1. Which are the main European Institutions?
2. Which is the most important? Why?
3. What can you vote at 18 years old?

4. Where is the European Parliament located?
5. Who is the current President of the European Parliament?

Suggested answer:

1. The principal European Institution are The European Parliament.
2. The most important is the European Parliament because it is the legislative and control organ.
3. Yes, I can.
4. It is located in Strasbourg, France.
5. The President of the European Parliament is Italian, Anthony Tajani, in charge from January 17th 2017.

TASK 2. (writing skills) **(10 minutes)**

Complete the sentences after having read again the lesson.

1. The European Parliament is:

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2. The Council of the European Union is:

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3. The European Commission is:

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4. The action of Censure is:

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5. The Court of European Justice is:

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Suggested answer:

1. The European Parliament is the most important Institution of EU. It is a legislative and control organ, together with the Council of the European Union. It has its seat in Strasbourg, France. It represents over 490 million citizens of the EU.
2. The Council of the European Union or Council of the Ministers formed by 28 representatives for every belonging State. It has its seat in Bruxelles, in Belgium.
3. The European Commission is the executive organ.
   Its functions are:
   - it carries out the Essays;
   - it formulates proposals in legislative subject;
   - it sets up and manages the Budget of the European union.
4. The action of Censorship is an act through which the European Parliament revokes the confidence to the European Commissions.
5. The Court Of European Justice is the judicial organ, has its seat in Luxemburg.

TASK 3. (Listening skills) **(5 minutes)**

Cross true or false.

	True	False
1. In the EU the legislative power is carried out by the Parliament.	☐	☐
2. The European Commission is the executive organ of the EU.	☐	☐
3. The European Commission created some law proposals to the Parliament and the Council of the European union.	☐	☐
4. The European Parliament prepares the Budget approved by the Council of the European Union.	☐	☐
5. The European Parliament can force the Council of the European Union to resign.	☐	☐

Suggested answer:

1. False
2. True
3. True
4. False
5. False

TASK 4. (Speaking skills) **(5 minutes)**

Could your teachers decide to bring you on a trip with the class to Strasburg, the attractive town in Alsazia (France), where one of the most important organs of the EU meets. What is this organ? What functions does it have?

Suggested answer:

1. The European Parliament
2. The functions of the Parliament are:
   - it approves the laws;
   - it checks and it approves the Economic Budget;
   - it controls the European Commission.

TASK 5. (Cooperative skills) **(30 minutes)**

In groups of 4, prepare a conceptual map of Unity 2. (Use the web, images and personal experiences.)

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a)speaking skills?				
b)writing skills?				
c)listening skills?				
d)reading skills?				

Lesson 3 – Sources of Law in the European Union

European Citizenship – The European Union

KNOWLEDGE: you will know the meaning of:

1. The sources of Law of the European Union.

SKILLS: you will know how to analyze, to distinguish and to compare:

1. the treaties of the European Union;
2. the characteristics of the European Treaties;
3. to improve a foreign language.

COMPETENCES: you will be able:

1. to understand the importance attributed to European treaties;
2. to analyze and to understand the importance of treaties;
3. to use English in a subject of study.

TIME: 60 min.

CLASSE: III section B

STUDENTS: 20

Materials and equipment:

- text book;
- interactive whiteboard;
- pencil;
- globe.

Methods and procedure:

- learning by doing;
- research;
- debate.

UNIT 3 – Sources of Law in the European Union

They are the Acts issued by the organs of the European Union (the Ministers' Council, Parliament and Committee).

The main sources of law are:

(in order of importance)

THE TREATIES

They are divided into:

1. **Founding treaties** as those that have founded the three European communities (Essays in Paris and Rome).
2. **Amending Treaties** to the founding Treaties, for example the Treaty of Maastricht 1992, (undersigned to strengthen the European union, to foresee a monetary union, to introduce the European citizenship, to promote the economic and social progress, to develop the cooperation among the members).
3. **Treaties of adhesion** of the new states that have joined the European union.

THE REGULATIONS

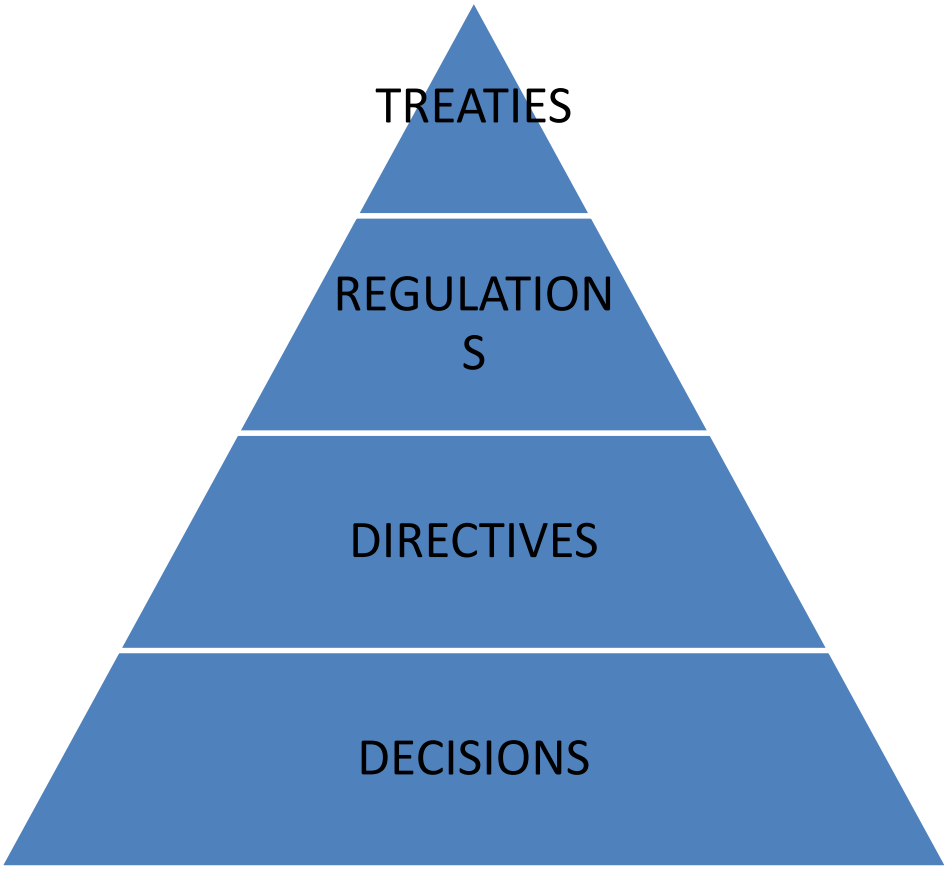
They are **general** Acts because addressed to various subjects, **obligatory** because they are directly regulated and in a binding way the subject to which they refer and, **directly applicable** in the territories of States members.

THE DIRECTIVES

they are also general sources (they are exclusively destined to the States), they are obligatory, only as it regards the objectives to achieve and they aren't directly applicable or, the States that are recipients of it, must adopt, subsequently, national actions (for example inside laws) that accomplish every single directive.

THE DECISIONS

They have, instead, an individual course, or they are destined to single subjects (for example to an enterprise) but, as the rules, they are compulsory and directly applicable, after having communicated them to the respective recipients.



TASK 1. Reading skills **(10 minutes)**

Read the text and answer the following questions:

1. Which are the Primary Sources of law of the UE?

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2. Which are the secondary?

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3. Which Sources of the EU are applied in the States members directly?

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4. What does the Essay of Maastricht establish?

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Suggested answer:

1. The treaties.
2. The regulations.
3. The regulations and the decisions.
4. Undersigned to strengthen the European union, to foresee a monetary union, to introduce the European citizen, to promote the economic and social progress, to develop the cooperation among States members.

TASK 2. Writing skills **(10minutes)**

Complete the sentences.

1. The sources of the law of the EU are:

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2. The Founding Treatieshave:

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3. The Regulations are:

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4. The Directives are:

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5. The Decisions are:

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Suggested answer:

1. acts issued by the organs of the European Union;

2. given life to the three European communities;
3. general Act because turned to various subjects;
4. general sources destined to States exclusively;
5. destined to single subjects.

TASK 3. Listening skills **(5 minutes)**

Cross if the sentence is True or False.

	True	False
1. The EU Treaties can be of founding, amending and of adhesion.	☐	☐
2. The Sources of the right of the EU can be ordered hierarchically.	☐	☐
3. The Directives are general, obligatory and directly applicable .	☐	☐
4. The Decisions are not general.	☐	☐
5. The Regulations are the most important Sources after the Treaties.	☐	☐

Suggested answer:

1. True
2. True
3. False
4. True
5. False

TASK 4. Speaking skills **(5 minutes)**

Solve it.

The Institutions of the European union could emanate directives that establish new rules about the waste disposal.

1. Who would they be addressed to?
2. Would they be compulsory?
3. Would they need national laws in order to be applied?

Suggested answer:

1. to an enterprise
2. Yes, they are.
3. No they aren't.

ACTIVITY' 5. Cooperative skills **(30 minutes)**

In groups of four, make a conceptual map of Unit 3. (Use the web, images and personal experiences).

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a)speaking skills?				
b)writing skills?				
c)listening skills?				
d)reading skills?				

Lesson 4 – Elements of contemporary democracies

Age: 15 to 17 years old

Language Level: upper intermediate

Subject: Civil education/English language

Teaching hours: 2 teaching hours

This is a two – hour lesson that will be done using shared photocopies, questioning and discussion.

Objectives:

1. Students will expand their:
   - vocabulary skills (they will get acquainted with civil education vocabulary);
   - reading/listening skills;
   - speaking skills;
   - writing skills.
2. Combine different subjects (teaching English through a civil education lesson)
3. Expand their knowledge on civil education.
4. Students will understand the complexity (often contradictory) of present states and democratic political systems.
5. A particular objective is to understand the historical origin of the current democracies, trying to allow the development of historical and political consciousness among students.
6. With the final discussion, students are given the opportunity to engage in the formation of views on some political issues that cause constant concern and controversy in today's European democracies.

Materials Needed:

- photocopies;
- computer;
- video projector.

Procedures

Warming up activities

- The lesson is based on already existing knowledge of high school students about democracy, representation, rights and the state with its individual characteristics.

- Thus, each sub – section begins with questions to students and gradually enriches the content with the teacher's intervention, using the photocopied text, and discussing, where necessary, to clarify vague concepts or historical issues.

Body of the lesson

The students are given photocopies with the "Elements of Contemporary Democracies".

After the presentation, one or more of the following suggested topics can be discussed:

PROBLEMS IN MODERN REPUBLICS

1. **Shrinking the welfare state**, namely social rights, due to budget deficits.
2. The international **pressure to reduce wages** due to the globalized economy.
3. The **increase of social and economic inequalities**, both internationally and within each developed and non-developed society.
4. The **crisis of representation** and the reduction of the influence of parties and trade unions.
5. The **crisis of ideologies** and the **lack of sense of historicity**. Especially young people feel like living in a constant presence ("the world has always been so"). Large sections of the population doesn't seem to understand that representative democracy is historically a recent, complicated, and under constant reformation constitution.
6. The degradation of the legislative and the **strengthening of the governmental** (not merely executive) **power**. The parliaments remain areas of public dialogue and government control, but in fact the only institutional counterweight is the courts.
7. The excessive **concentration of press enterprises** (electronic and printed) in the hands of powerful economic centers that alters the freedom of the press.
8. **Reducing state sovereignty** by generating phenomena such as globalization of the economy and climate change due to ecological degradation, phenomena which no state, however powerful, has the power to deal with alone.
   At the same time, many of the powers of the states are transferred to supranational organizations such as the World Bank, the International Monetary Fund, the World Trade Organization, even the European Union, etc., which operate with a deficit of democracy.
9. The **proliferation of identity politics**, which includes two opposing trends: on the one hand, groups formed around identity issues such as homosexuals or LGBT, ethnic, religious or cultural minorities etc., are often claiming and securing rights, **broadening the social content of democracy**, on the other hand, the reappearance of a closed and phobic national identity leads to the spread of xenophobia, ultra-nationalism and racism, based on the issue of immigration and refugees, **threatening democracy**.

Finally, if there is time or the lesson can be extended, the following topics can be put in the form of an open discussion:

1. Is state something that considered to be bad, good or neutral?
2. Are social rights of equal value with individual – civil rights?
3. Can European Union become a form of democratic state?
4. Does democracy really work today?

Ioannis Psimitis – Teacher of Civil Education

at the 1st Lyceum of Perama

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Unit 4 – Art

Lesson 1 – The impressionists

The Impressionists

KNOWLEDGE: you will know the meaning of:

1. Art and methods of Impressionists (historical origins, objectives).

ABILITIES: you will know how to analyze, to distinguish and to compare:

1. The origins of the movement.
2. Techniques, subjects and composition.
3. To improve the use in foreign language.

COMPETENCES: you will be able of:

1. To understand the importance attributed to the relationship among artists, society and expositions.
2. To analyze and to understand the role of the photography.
3. To use English in a subject of study.

TIME: 60 min. for each lesson

CLASSE: V section A

STUDENTS: 20

Materials and equipment:

- text book;
- interactive white board;
- pencil.

Methods and procedure:

- learning by doing;
- research;
- debate.

UNIT 1 – The impressionists

In the spring of 1874 a group of young painters defied the official Salon in Paris and organized an exhibition of its own. While this was in itself a break with established customs, the works which these men showed seemed at first glance even more revolutionary. The reaction of visitors and critics was by no means friendly; they accused the artists of painting differently from the accepted methods simply to gain attention or make fun of honest folk. It took years of bitter struggle before the members of the little group were able to convince the public of their sincerity, not to mention their talent.

This group included Monet, Renoir, Camille Pissarro (1830 – 1903), Alfred Sisley (1839 – 1899), Edgar Degas (1834 – 1917), Paul Cézanne (1839 – 1906) and Berthe Morisot (1841 – 1895). They were not only of diverse personalities and talents, but also, to a certain extent, of differing conceptions and tendencies. All were born almost within the same decade, they all went through similar experiences and fought against the same opposition. Thrown together more or less by chance, they accepted their common fate and eventually adopted the designation of 'Impressionists', a word coined in derision by a satirical journalist. The subject matter of their paintings was as diverse as their personalities.

Pierre – Auguste Renoir "*The Umbrellas*"

Pierre – Auguste Renoir, The Umbrellas, about 1881 – 1886. Oil on canvas, 180.3 × 114.9 cm.

Currently on loan to Dublin, Dublin

The Umbrellas shows a lively Parisian street. The open umbrellas suggest that it is raining, although the woman in the middle, visible in profile, is either opening or closing her umbrella. Only the woman on the left, carrying a large hatbox, seems un- troubled by the rain. She is without protection from the elements, having no coat, hat, gloves or umbrella.

The composition is like a snapshot, which cuts off the scene on both sides. This is a naturalistic arrangement and was popular with several of the impressionist artists at the time.

However, the composition of the painting is very carefully considered. The umbrellas form a geometric pattern of angles and shapes in blues and grays, which create a linking rhythm at the top of the painting. The little girl's hoop and the hatbox held by the woman on the left provide a balance of curves in the foreground.

This painting was made in two distinct stages of Renoir's career, with a probable interval of four years.

The figures on the right hand side of the canvas exhibit the bright palette and soft brushwork we associate with Renoir's Impressionist style. Simultaneously, the couple on the left and the figures in the background are created with more distinctive outlines and subdued colours. This change was probably due to Renoir's study of classical art in the period between when the painting was begun and when he finished it. The change in woman's fashion also reflects the two periods in which they were painted.

Glossary:

- untroubled – not showing problems or anxiety
- snapshot – a photograph
- pattern – a regularly repeated arrangement
- linking – that connects
- hoop – a ring of wood, metal or plastic used as a toy
- provide – to make available for use
- exhibit – to show
- outline – the main shape or edge of something
- subdued – not very bright
- loan – the act of giving something to a third party for a limited amount of time

TASK 1. (reading and speaking skills) **(10 minutes)**

Read the text and complete the following passage using the terms and expressions below.

umbrellas ~ Impressionism ~ his later period ~ two ~ tall young woman ~four ~ foreground ~ elegantly attired mother

The Umbrellas, an ambitious full – length painting probably begun in the autumn of 1881. By the time it was finished, in 1885, Renoir's style had evolved from the luminous palette and feathery handling of 1) …… to the more linear and classical technique of 2) …… .

Six principal figures dominate the 3) ……. ; behind them appear innumerable heads and shoulders and at least twelve 4) ……. in a seemingly endless vista.

The group on the right consists of an 5) ……. accompanied by her two daughters. On the left, a 6) ……. , carries a hatbox over her left arm. In the background, various diminutive figures, all in hats, raise their umbrellas.

It has long been recognized that The Umbrellas was painted in 7) ……. different stages, at least 8) ……. years apart.

Suggested answers:

1. his later period
2. Impressionism
3. foreground
4. umbrellas
5. elegantly attired mother
6. tall young woman
7. two
8. four

TASK 2. (writing skills) **(10 minutes)**

Look at these two paintings – both on display at the National Gallery – and choose the one you like most. Prepare a commentary of the painting chosen using the expressions from the previous exercise. When you have finished present your commentary to your classmates.

TASK 3. (listening skills) **(5 minutes)**

Question 1. Who painted 'Impression Sunrise' (1872)?

- Camille Pissarro
- Claude Monet
- Henri de Toulouse-Lautrec
- Pierre Auguste Renoir

Question 2. Who painted 'Water Lilies and Japanese Bridge' (1899)?

- Edgar Degas
- Alfred Sisley
- Pierre Auguste Renoir
- Claude Monet

Question 3. Who painted 'At the Moulin Rouge' (1892-95)?

- Edgar Degas
- Camille Pissarro

- Henri de Toulouse-Lautrec
- Pierre Auguste Renoir

Question 4. Which TWO art forms had a major influence on Impressionism?

- Photography
- Chinese Art
- Folk Art
- Japanese Art

Suggested answers:

1. Claude Monet
2. Claude Monet
3. Henri de Toulouse-Lautrec
4. Photography, Japanese Art

TASK 4. (Cooperative skills)**(30 minutes)**

With three other friends, make a conceptual map of Unit 1. (Use the web, images and personal experiences).

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a)speaking skills?				
b)writing skills?				
c)listening skills?				
d)reading skills?				

Lesson 2 – Colours

CLIL Unit – Art

Lesson: Colours

Objectives:

1. Students will check the vocabulary related to colours.
2. Students will learn how colours are organized and their use.
3. Students will be able to distinguish the different colours .
4. Students will develop their skills in working on their own and with collaborative activities.

Time available: 60 minutes (1 hour)

Form of students: 1st ESO grade students. 12 to 13 years old.

Prior knowledge : The students should already know (that):

1. name of the colours;
2. colour range.

Materials and equipment:

- smart board;
- students' notebook.

Introduction activity:

The teacher will present the unit about colors with a slideshow presentation (student's book).

Students will listen to the presentation about using colours to organize homework and do the exercises to practice and improve their listening skills.

Preparation: matching

Students will do a matching activity in pairs

Match the two parts of the sentences and write a – f next to the numbers 1 – 6.

1. ..... You can use colour	a. from a library.
2. ..... A stationery shop	b. to remember important things.
3. ..... You can write on sticky notes	c. days, weeks and months of a year.

4. ..... We borrow books — d. is red, white and blue.
5. ..... The flag of Britain — e. coding to organize homework.
6. ..... A calendar shows the — f. sells pens and paper.

Check your understanding: true or false

Students will answer , in pairs, a true/false activity about the presentation of colours.

Circle True or False for these sentences.

1. You need to buy some stationery to organize your homework like this. True / False
2. The things you need are not cheap. True / False
3. The colour you choose should mean something to you. True / False
4. PE is yellow because she doesn't like yellow. True / False
5. She keeps all her notes in the same folder. True / False
6. She uses red for geography notes. True / False
7. She uses flags to mark pages she has to read. True / False

Check your understanding: matching

Students will answer individually a matching activity about colours .

Match the subjects with the colours and write a – e next to the numbers 1 – 5.

1. ..... green — a. French
2. ..... yellow — b. geography
3. ..... blue — c. PE
4. ..... black — d. history
5. ..... pink — e. maths

Check your vocabulary: gap fill

Students will complete the text using appropriate vocabulary related to the unit.

Complete the sentences with a word from the box.

calendar notes folders

colour pages subject

1. The speaker uses _____ coding to organize her homework.
2. She suggests buying coloured pens, _____ and other stationery.
3. She chooses a colour for each _____.
4. History is blue so her folder is blue and her history _____ are on blue sticky notes.
5. Then she uses blue flags to mark the _____ she needs to read for history homework.
6. She uses coloured stars on a _____ to organize each subject's homework.

Discussion

Finally, students will discuss in small groups which colour they would choose for each school subject.

Which colours would you choose for each school subject? Why?

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Did you learn new things during the lesson?				
2. Did you have enough time to do the activities?				
3. Were the activities interesting for you?				
4. Did you take part in the lesson?				
5. Did the lesson help you improve your vocabulary on the topic?				
6. Did the lesson help you improve your				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Lesson 3 – The ancient Greek theatre

Students will get some knowledge about the ancient Greek theatre as a structure , its use and influence upon the societies.

Age: 15 to 17 years old

Language Level: upper intermediate

Subject: Arts/Theatre/English language

Teaching hours: 2 teaching hours

Objectives:

1. Students will expand their:
   - vocabulary skills;
   - reading / listening skills;
   - speaking skills;
   - writing skills;
   - get acquainted the parts of the ancient Greek theatre.
2. Combine different subjects (teaching English with art/theatre).
3. Expand their knowledge on the ancient Greek theatre as a structure.
4. Students will define and recognize the part of the ancient Greek theatre ant their use.
5. Motivate students study ancient Greek theatre as a structure and watch it on the video https://www.youtube.com/watch?time_continue=2&v=8ihNgTcaK7Q and find more information about it http://www.diazoma.gr/en/theaters/theatre-of-epidavrus/.
6. Motivate students study ancient Greek theatre (tragedies and Comedies).

Materials Needed:

- photocopies;
- computer;
- video projector.

Procedures:

Warming up activities

- We make a short introduction on ancient Greek Theatres as structures.
- We can show them some pictures of ancient Greek theatres both as structures and in use.
- We give our students new vocabulary they may need on these topics ().

Body of the lesson

- We ask students read the text with some information about the ancient Greek Theatres.
- The teacher monitors a discussion with the students on the structure and the use of the ancient Greek theatre .

The teacher can extend the lesson to the next part (parts of the ancient Greek theatre)

https://erasmusbridgesgr.wordpress.com/clil/

and for assessment

https://www.purposegames.com/game/the-parts-of-the-ancient-theatre-language-game.

Closing

Students can write a summary about the structure and the use of the ancient Greek theatre.

A. Read the text and answer the following questions

Ancient Greek theatre

What was it like to go to the theatre nearly 2500 years ago? Greek theatre has survived through the ages as a powerful and influential art form.

Most Greek cities had a theatre. Some theatres were very big, with capacity for more than 15,000 people in the audience.

Greek actors wore masks, made from stiffened linen, with holes for eyes and mouth. The masks showed the audience what kind of character an actor was playing (sad, angry or funny).

The best actors and play writers were awarded prizes.

The most famous writers of plays were Aeschylus, Sophocles and Euripides for tragedy and Aristophanes for comedy.

Greek theaters are the only ancient monuments that can still be used today and for the same purposes as in the past.

Their exceptional geographical situation, their aesthetics, their harmony of forms and their inimitable acoustics, which reflect the values, ideals and knowledge of the civilization that gave birth to them, are a source of admiration.

Open spaces of gathering and exchanges as they were, they played a primordial role in the life of the Greeks. Thousands of spectators attended performances of tragedies and comedies of contemporary poets in the many theaters of the ancient Greek world. Often the people's assemblies took place there too and the theaters witnessed the birth of democracy. Their role was therefore not only artistic and cultural but also political and social. Last but not least, the

very presence of theaters in the sanctuaries of Aesculapius testifies to the therapeutic role of theater from a very old age.

Vocabulary

- *stiffen*: make or become stiff or rigid
- *inimitable*: so good or unusual as to be impossible to copy; unique.
- *primordial*: initial, original, primary, originative.
- *assembly*: a group of people gathered together in one place for a common purpose.
- *sanctuary*: a holy place; a temple

Comprehension Questions

1. What was the capacity for spectators of the ancient Greek theatres?
2. Are ancient Greek theatres still being in use?
3. What do you think is remarkable about ancient Greek theatres?
4. Were they used only for presenting theatre plays?

B. More information

https://www.youtube.com/watch?time_continue=2&v=8ihNgTcaK7Q

http://www.diazoma.gr/en/theaters/theatre-of-epidavrus/

C. Free discussion

"Their role was therefore not only artistic and cultural but also political and social". Comment on this.

Grammar Passive Voice

An active sentence has the subject first, followed by the verb and finally the object (e.g. "I wrote the exercise")

So, in this example, the subject is 'I', the verb is 'wrote' and the object is 'the exercise'.

But, we don't always need to make sentences this way. We might want to put the object first, or perhaps we don't want to say who did something. This can happen for lots of reasons. In this case, we can use a passive, which puts the object first: (e.g. "The exercise was written (by me)" 'by me' can be added if we want, but it isn't necessary)

How to make the Passive in English

We make the passive by putting:

1. The object (of the active voice) first.
2. The verb 'to be' into whatever tense we need and then we add the past participle of the verb (for regular verbs adding - ed to the infinitive). So play becomes played.

3. The subject of the active sentence(person or thing that does the verb) can be introduced with "by", showing who caused it.

When should we use the Passive?

1. When we want to change the focus of the sentence:

Antigone was written by Sophocles. (We are more interested in the play than the writer in this sentence.)

2. When who or what causes the action is unknown or unimportant or obvious or 'people in general':

Most theatres were destroyed during the medieval centuries.

3. In formal writing instead of using someone/ people/ they (these can be used in speaking or informal writing):

The play will be presented next month.

4. In order to put the new information at the end of the sentence to improve style:

The play was performed by Orson Welles.

5. When the subject is very long:

I was surprised by how well the students understood the play. (More natural than: 'how well the students understood the play surprised me').

Exercises

Turn the following sentences into the Passive Voice :

1. Greek actors wore masks.
2. They made the masks from stiffened linen.
3. The masks showed the audience the character of the actor.
4. We still use ancient Greek theatres, for the same purposes as in the past.
5. Thousands of spectators attended tragedies and comedies.
6. They awarded the actors and writers.
7. Their harmony of forms, reflect the values and knowledge of that civilization.
8. The ancient Greeks built the theatres, in the sanctuaries of Aesculapius.

Evangelos Marinis – Greek Literature Teacher

at the 1st Lyceum of Perama

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Lesson 4 – Studying scenes from a theatre play

Students will be acquainted with extracts from the "Merchant of Venice" by Shakespeare, write and perform a scene from the story.

Age: 15 to 17 years old

Language Level: upper intermediate

Subject: Arts/Theatre/English language

Teaching hours: 2 teaching hours

Objectives:

1. Students will expand their:
   - vocabulary skills;
   - reading/listening skills;
   - speaking skills;
   - writing skills;
   - get acquainted with old form of English , spoken the time of Shakespeare;
   - Students will collaborate in creating an informal theatrical performance.
2. Combine different subjects (teaching English with art/theatre/literature).
3. Expand their knowledge on literature (theatre scripts / humanistic studies /acting in a play).
4. Student get acquainted to old form of the English language.
5. Students will define and recognize important authors/philosophers/playwrights etc.
6. Motivate students read the play and watch it on the video "The Merchant of Venice", by Michael Radford , with Al Pacino as Shylock.

Materials Needed:

- photocopies;
- computer;
- video projector.

Procedures

Warming up activities

- We make a short introduction on discrimination.
- We can make use of an event that happened recently or some pictures or newspaper articles, concerning discrimination /racism / refugees, etch

- We give our students new vocabulary they may need on these topics (behaviors, feelings, results or impacts of discrimination and racism).

Body of the lesson

- Students are divided in 4 groups of 5 to 6.
- Two groups are given photocopies with the monologue of Shylock and the other two groups are given the monologue of Portia.
- Students read the dialogues, keep notes and then they present them in class. The subject groups work supplementary to each other in presenting the character, his/her feelings, behavior, his/her aim, etch.
- Then the teacher monitors a discussion on each character in class and asks the students keep notes.
- Each subject group ask the other subject group questions about their feelings/way of life/aims, etch.
- Students watch on the video the monologues acted out by Al Pacino (Shylock) https://www.youtube.com/watch?v=th7euZ30wDE and Lynn Collins(Portia) https://www.youtube.com/watch?v=q4tlvqlApmw .
- After watching the videos, the students evaluate the notes they had kept beforehand and make corrections or changes.
- The teacher monitors a discussion with the students on the play / the actors / the scenery etc. :
    - the historical period;
    - how the actors are dressed;
    - the way they act out their role.

Closing

Students can write a summary of the play.

Assessment

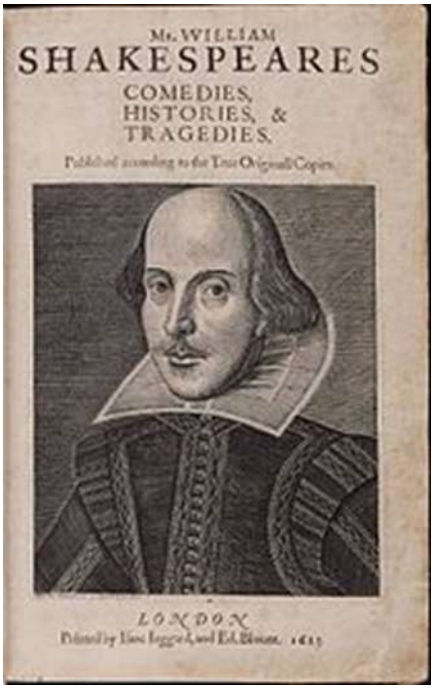
Students will perform the dialogues in front of the class and the teacher will assess their dialogue and collaboration.

SALARINO Why, I am sure, if he forfeit thou wilt not[1] take his(Antonio's) flesh. What's that good for? **SHYLOCK** To bait fish withal[2]. If it will feed nothing else, it will feed my revenge. He hath[3] disgraced me and hindered me half a million, laughed at my losses, mocked at my gains, scorned my nation, thwarted my bargains, cooled my friends, heated mine enemies – and what's	

his reason? I am a Jew. Hath not a Jew eyes? Hath not a Jew hands, organs, dimensions, senses, affections, passions? Fed with the same food, hurt with the same weapons, subject to the same diseases, healed by the same means, warmed and cooled by the same winter and summer as a Christian is? If you prick us, do we not bleed? If you tickle us, do we not laugh? If you poison us, do we not die? And if you wrong us, shall we not revenge? If we are like you in the rest, we will resemble you in that. If a Jew wrong a Christian, what is his humility? Revenge. If a Christian wrong a Jew, what should his sufferance be by Christian example? Why, revenge. The villainy you teach me I will execute – and it shall go hard but I will better the instruction.

William Shakespeare
The Merchant of Venice
Act 3 , scene 1

OLD FORMS
thou wilt not[1] : you will not
withal[2]: with, in addition
hath[3] : has

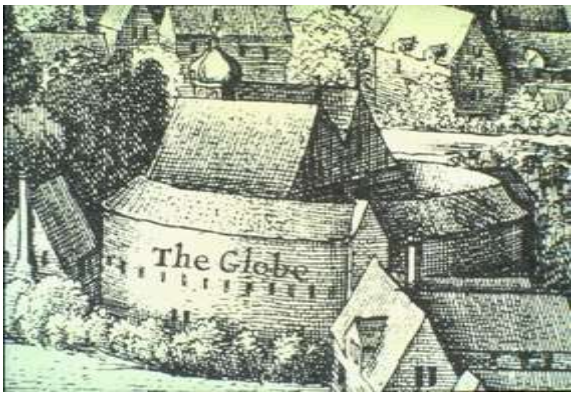


PORTIA
Then must the Jew be merciful.
SHYLOCK
On what compulsion must I? Tell me that.
PORTIA
The quality of mercy is not strained.
It droppeth[4] as the gentle rain from heaven
Upon the place beneath. It is twice blessed:
It blesseth[5] him that gives and him that takes.
'Tis mightiest in the mightiest. It becomes
The thronèd monarch better than his crown.
His scepter shows the force of temporal power,
The attribute to awe and majesty
Wherein doth[6] sit the dread and fear of kings,
But mercy is above this sceptered sway.
It is enthronèd in the hearts of kings.
It is an attribute to God himself.
And earthly power doth then show likest

God's
When mercy seasons justice. Therefore, Jew,
Though[7] justice be thy[8] plea, consider this—
That in the course of justice none of us
Should see salvation. We do pray for mercy,
And that same prayer doth teach us all to render
The deeds of mercy. I have spoke thus much
To mitigate the justice of thy plea,
Which if thou[9] follow, this strict court of Venice
Must needs give sentence 'gainst the merchant there.

William Shakespeare
The Merchant of Venice
Act 4 , scene 1

OLD FORMS
It droppeth[4]: it drops
It blesseth[5] : it blesses
doth[6] : does
Though[7] : your
thou[9] : you
'gainst[10]: against



Shakespeare's Globe theatre

Vocabulary

- *awe* : inspire with awe
- *bait* : Food placed on a hook or in a net, trap, or fishing area to entice fish or other animals as prey.

- *deal* : An agreement entered into by two or more parties for their mutual benefit, especially in a business or political context
- *flesh* : he soft substance consisting of muscle and fat that is found between the skin and bones of a human or an animal.
- *forfeit* : a fine or penalty for wrongdoing or for a breach of the rules in a club or game.
- *heal* : Cause (a wound, injury, or person) to become sound or healthy again.
- *hinder* : create difficulties for (someone or something), resulting in delay or obstruction.
- *humiliate* : Make (someone) feel ashamed and foolish by injuring their dignity and pride.
- *insult* : Speak to or treat with disrespect or scornful abuse.
- *mitigate* : make less severe, serious, or painful
- *mock* : tease or laugh at in a scornful or contemptuous manner.
- *offend* : Cause to feel upset, annoyed, or resentful.
- *plea* : A request made in an urgent and emotional manner
- *prick* : Make a small hole in (something) with a sharp point; pierce slightly
- *rile* : Make (someone) annoyed or irritated
- *scepter* : ornamented staff carried by rulers on ceremonial occasions as a symbol of sovereignty
- *scorn* : tease or laugh at in a scornful or contemptuous manner
- *sway* : rule; Control
- *thwart* : Prevent (someone) from accomplishing something.
- *tickle* : Lightly touch or prod (a person or a part of the body) in a way that causes mild discomfort or itching and often laughter

VOCABULARY about FEELINGS

Angry	**Ashamed**	**Confused**	**Hurt**	**Thoughtful**	**Uncertain**	**Thankful**
annoyed disgusted frustrated furious hateful hostile indignant infuriated mad outraged pissed off upset	apologetic embarrassed foolish guilty humble idiotic regretful shameful	bewildered perplexed puzzled scattered troubled unfocused **Sad** depressed melancholy miserable unhappy weepy	abandoned abused attacked bitter cheated disappointed grieving humiliated mournful sorrowful	challenged curious informed interested **Scared** afraid alarmed fearful frightened horrified hysterical nervous terrified	cynical doubtful dubious distrustful hesitant indecisive pessimistic skeptical suspicious unsure unsettled	appreciative grateful obliged relieved **Surprised** amazed astonished astounded shocked

Comprehension Questions

Shylocks' s monologue

1. Is Shylock willing to compromise with Antonio ?
2. Why does he want to get Antonio's flesh?
3. How does he feel against the Christians?
4. How does he excuse his feelings?

Portia' s monologue

1. What does Portia suggest Shylock to do?
2. What does she try to do after his refusal?
3. How does she try to reach her target?
4. What will happen if Shylock insists on his decision?

Free discussion

1. Describe Shylock's feelings?
2. Why do you think Shylock wants to get revenge against Antonio?
3. How does Portia try to persuade Shylock to be merciful?

The First Conditional

The first conditional has the **present simple** after 'if', then the **future simple** in the other clause:

if + present simple, ... will + infinitive

It's used to talk about things which might happen in the future. Of course, we can't know what will happen in the future, but this describes possible things, which could easily come true.

The Zero Conditional

We can make a zero conditional sentence with two present simple verbs (one in the 'if clause' and one in the 'main clause'):

if + present simple, ... present simple.

This conditional is used when the result will always happen.

So, if water reaches 100 degrees, it always boils. It's a fact.

I'm talking in general, not about one particular situation.

The result of the 'if clause' is always the main clause.

The 'if' in this conditional can usually be replaced by 'when' without changing the meaning.

Evangelos Marinis – Greek Literature Teacher

at the 1st Lyceum of Perama

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Unit 5 – Geography

Lesson 1 – Natural disasters – volcano

INTRODUCTION

Destruction of Atlanta. Volcano in Pompey. Tsunami in the Pacific. Earthquake in Haiti. Natural disasters have been accompanying our planet forever, and despite increasingly sensitive scientific instruments, they are generally unpredictable. In fact, the number of global natural disasters since the 1960s has increased threefold. While hurricanes, mysteries, and tornadoes run the rankings of natural disasters with nearly forty percent, the number of earthquakes is stable (13%). The scientific community considers climate change to be the cause of these phenomena. Is a man their victim or cause?

Lesson: Geography

Topic: Natural disasters – volcano

Objectives:

1. Practice of vocabulary related to natural disasters.
2. Practice of listening skills while watching a video " What is a volcano?" and listening comprehension in follow – up exercises.
3. Practice of reading skills : discussion about natural disasters in general, reading of given text related to natural disasters and post – reading activities to test reading comprehension.
4. Practice of writing skills – students should write an essay about typical natural disasters in their home country and mention the most serious ones .Writing could be set for homework.

Time available: 45 minutes (1 hour)

Form of students: 2nd grade

Assumptions :

- students are able to work with the Internet;
- map;
- text.

Prior knowledge: vocabulary related to the topic

Materials and equipment:

- map;
- the Internet;
- smart board overhead projector.

Methods:

- individual work;
- discussion;
- controlled interview.

<u>Stage 1 (5 minutes)</u> – introduction to the topic

Activity 1. Should motivate students and focus them on given topic. Students complete the names of natural disasters . The pictures and dictionaries help them to identify the right ones.

Task 1. Look at the pictures and complete the sentences.

1. ..... are the most often occurred natural disasters in the USA.

2. Earthquakes cause huge waves in the sea called ..... .

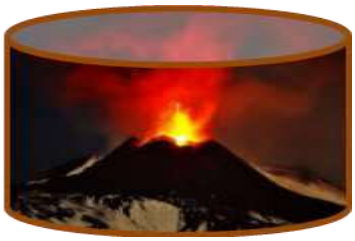
3. The dog is helping to look for the people hit by ..... .

4. The buildings in the picture were destroyed by the natural disaster called ..... .

5. ..... are the most occurred natural disasters in the USA.

6. Numerous cyclones result in ..... .

7. Etna is ..... .



Stage 2 (15 minutes)

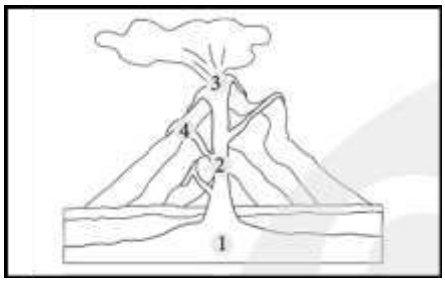
In this part of the lesson students watch the video about a volcano.

https://www.youtube.com/watch?v=WgktM2luLok

Listening comprehension is tested by follow – up exercises in Activity2. For better understanding students can use atlases or GOOGLE SEARCH ENGIN.

Task 2.

1. Label to the parts of a volcano:



1. ..... 3. .....

2. ..... 4. .....

2. Match the name of the volcano and the name of the island:

a) Fudži	1) Sicília
b) Etna	2) Anak Krakatau
c) Mauna Loa	3) Honšú
d) Krakatau	4) Island
e) Hekla	5) Havaj

Correct pairs: a) ____ b) _____ c) _____ d) _____ e) _____ .

3. Decide if the following sentences are true (T) or false (F).

a)	Eruption is the moment of the magma uprush on the earth surface.	
b)	The temperature of magma reaches up to 1200° C.	
c)	Lava is magma which is coming up to the earth surface.	
d)	Volcanic vent is the way of magma coming up from the lava hearth to the earth surface.	

Stage 3 (5 minutes)

Discussion about natural disasters in general and their impact on people´s lives and nature as well.

Stage 4 (10 minutes)

Teacher asks students to read the text.

What is a natural disaster?

The definition of natural disasters is any catastrophic event that is caused by nature or the natural processes of the earth. The severity of a disaster is measured in lives lost, economic loss, and the ability of the population to rebuild. Events that occur in unpopulated areas are not considered disasters. So a flood on an uninhabited island would not count as a disaster, but a flood in a populated area is called a natural disaster.

All natural disasters cause loss in some way. Depending on the severity, lives can be lost in any number of disasters. Falling buildings or trees, freezing to death, being washed away, or heat stroke are just some of the deadly effects. Some disasters cause more loss of life than others, and population density affects the death count as well.

Then there is loss of property, which affects people's living quarters, transportation, livelihood, and means to live. Fields saturated in salt water after tsunamis take years to grow crops again. Homes destroyed by floods, hurricanes, cyclones, landslides and avalanches, a volcanic eruption, or an earthquake are often beyond repair or take a lot of time to become livable again. Personal effects, memorabilia, vehicles, and documents also take a hit after many natural disasters.

The natural disasters that really affect people worldwide tend to become more intense as the years go on. Frequency of earthquakes, mega storms, and heat waves has gone up considerably in the last few decades. Heavy population in areas that get hit by floods, cyclones, and hurricanes has meant that more lives are lost. In some areas, the population has gotten somewhat prepared for the eventuality of disasters and shelters are built for hurricanes and tornadoes. However, loss of property is still a problem, and predicting many natural disasters isn't easy.

Scientists, geologists, and storm watchers work hard to predict major disasters and avert as much damage as possible. With all the technology available, it's become easier to predict major storms, blizzards, cyclones, and other weather related natural disasters. But there are still natural disasters that come up rather unexpectedly, such as earthquakes, wildfires, landslides, or even volcanic eruptions. Sometimes, a time of warning is there, but it's often very short with catastrophic results. Areas that are not used to disasters affected by flash floods or sudden hail storms can be affected in an extreme way.

However, despite the many natural disasters the world over, mankind has shown amazing resilience. When an area or country is badly affected by a natural disaster, the reaction is always one of solidarity and aid is quick to come. There are organizations set up with the primary goal of being prepared for natural disasters. These groups work on global and local scale rescue work. Aside from those who have chosen to make disaster relief their life-work, when disasters hit, it's the individuals who step in who help to make a difference.

Many people talk about when a disaster has hit and their neighbors and countrymen have come to aid, often to their own loss. People will step in and donate items, time, and skills in order to help those affected by a natural disaster. Celebrities will often do what they can to raise money through concerts, phone marathons, and visiting affected areas with aid. People have also shown that they can rebuild, lives can be remade or start over. Trauma is a big after effect of natural disasters and getting counseling has been the focus of aid—to heal emotionally as well as physically.

It's clear that natural disasters are a part of life as we know it. However, science is making it more possible to predict, aid is faster at coming, and people are learning how to rebuild in safer areas.

http://www.basicplanet.com/natural-disasters/

Teacher asks a few questions to find out the level of understanding.

Stage 5 (10 minutes)

Students should write an essay about typical natural disasters in the world and mention the most serious ones. They can use the internet search engine.

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Did you learn new things during the lesson?				
2. Did you have enough time to do the activities?				
3. Were the activities interesting for you?				
4. Did you take part in the lesson?				
5. Did the lesson help you improve your vocabulary on the topic?				
6. Did the lesson help you improve your				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Lesson 2 – Earthquake

INTRODUCTION

Did you know that ... ?

1. Earthquakes are the hardest predictable natural disaster?
2. The greatest number of earthquakes occur in the period April to June, the smallest in the period from December to January?
3. Earthquakes are one of the most obvious signs of the turmoil of our earth?

Areas of earthquake occurrence

In general, the strongest earthquakes occur in two zones of the globe – the Pacific and Mediterranean – Himalayan.

The first zone is the Kordillery, New Guinea, New Zealand, Alaska, Philippines, Japan – the most beautiful country in the world and Kamchatka.

In the second are Apennines, Alps, Caucasus, Asia Minor, Pamir, and the Himalayas.

Lesson: Geography

Topic: Earthquake

Objectives:

1. Practice of vocabulary related to earthquakes.
2. Practice of listening skills while watching a video "What is an earthquake ?" and listening comprehension in follow – up exercises.
3. Practice of reading skills: discussion about earthquakes in general, reading of given text related to natural disasters and post – reading activities to test reading comprehension.
4. Practice of writing skills – students should find information about topic : What to do before, during and after earthquake?

Time: 45 minutes (1 hour)

Form of students: 2nd grade

Assumptions:

- students can work with map, atlas of the world, internet, text.

Materials and equipment:

- map;
- the Internet;
- smart board;
- overhead projector.

Methods and procedure:

- group work;
- individual work;
- discussion;
- controlled interview.

Stage 1 (5 minutes) – Discussion about natural disasters in general and their impact on people´s lives and nature as well.

Stage 2 (12 minutes) – Listening

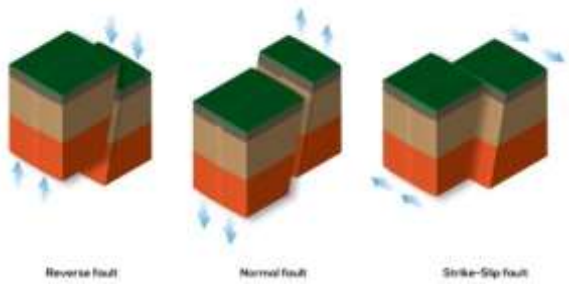
In this part of the lesson students watch the video about an earthquake.

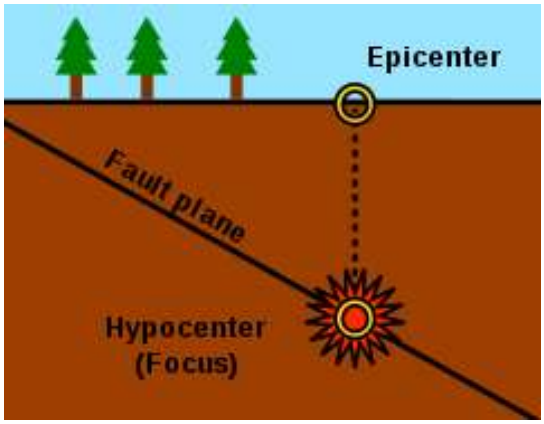
https://www.youtube.com/watch?v=hlePrsXTGxQ (Facts & Information)

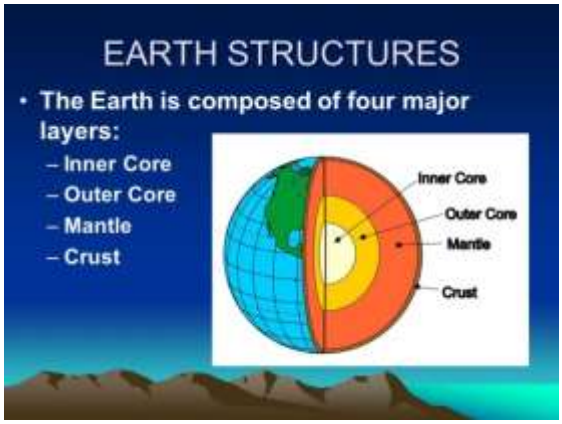
Listening comprehension is tested by follow – up exercises in Task 1.

Task 1.

Earthquake







Watch the video about earthquakes and do following exercises:

https://www.youtube.com/watch?v=hlePrsXTGxQ

Complete the sentences : (use given pictures)

1. The surface where they slip is called a ..... .
2. Earthquakes are recorded by instruments called ..... .

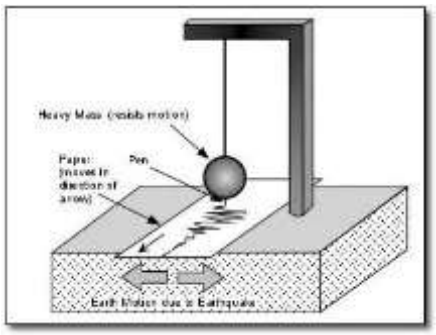
3. The earth has four major layers: ..... .

Correct the sentence :

4. The location below the earth´s surface where the earthquake starts is called the epicenter and the location directly above it on the surface of the earth is called the hypocenter.

Choose the correct answer:

5. Which of the following is responsible for rapid changes to earth´s surface caused by shifting plates?
   a) rivers
   b) erosion
   c) earthquakes
   d) glaciers



Stage 3 (3 minutes)

Activity 2 should motivate students and focus them on given topic. They get key words related to earthquakes. Understanding of key words is checked by a teacher. Using of mother tongue is possible.

KEY WORDS

sheer nature´s power,	natural occurrences,		rumblings of the earth´s surface,
tension,	prolonged,		to flatten an entire city,
to toss people around,	seabed,	faults,	to trigger landslides

Stage 4 (15 minutes)

Teacher asks students to read the text.

Task 2.

Earthquakes

Turn on the TV or read the newspapers and almost always there is something devastating happening somewhere as a result of sheer nature's power. Examples of such natural occurrences are hurricanes, tornados, wildfires, volcanic eruptions, flooding, earthquakes and

tsunamis. These are usually not caused directly by humans, but their effects live with us for a long time. In this lesson we shall look at one of such natural occurrences...earthquakes!

What is an Earthquake?

Simply, earthquakes are the rumblings, shaking or rolling of the earth's surface. It is usually what happens when two blocks of the earth suddenly slip past one another, or break apart from each other as a result of tension caused by prolonged energy build up.

Earthquakes come in many forms. It can be felt as a shock under your feet, or may be very powerful and destructive enough to flatten an entire city. They can happen anywhere, land or sea.

An earthquake (also known as a quake, tremor or temblor) is the shaking of the surface of the Earth, resulting from the sudden release of energy in the Earth's lithosphere that creates seismic waves. Earthquakes can range in size from those that are so weak that they cannot be felt to those violent enough to toss people around and destroy whole cities. The seismicity or seismic activity of an area refers to the frequency, type and size of earthquakes experienced over a period of time.

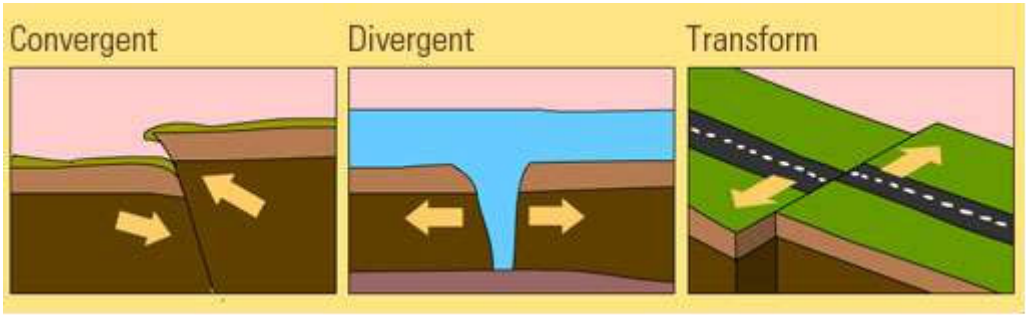
At the Earth's surface, earthquakes manifest themselves by shaking and sometimes displacement of the ground. When the epicenter of a large earthquake is located offshore, the seabed may be displaced sufficiently to cause a tsunami. Earthquakes can also trigger landslides, and occasionally volcanic activity.

In its most general sense, the word earthquake is used to describe any seismic event — whether natural or caused by humans — that generates seismic waves. Earthquakes are caused mostly by rupture of geological faults, but also by other events such as volcanic activity, landslides, mine blasts, and nuclear tests. An earthquake's point of initial rupture is called its focus or hypocenter. The epicenter is the point at ground level directly above the hypocenter.

Types of Earthquakes & Faults

There are four different types of earthquakes: tectonic, volcanic, collapse and explosion.

- A tectonic earthquake is one that occurs when the earth's crust breaks due to geological forces on rocks and adjoining plates that cause physical and chemical changes.



- A volcanic earthquake is any earthquake that results from tectonic forces which occur in conjunction with volcanic activity.

- A collapse earthquake are small earthquakes in underground caverns and mines that are caused by seismic waves produced from the explosion of rock on the surface.
- An explosion earthquake is an earthquake that is the result of the detonation of a nuclear and/or chemical device.

http://eschooltoday.com/natural-disasters/earthquakes/what-is-an-earthquake.html

https://en.wikipedia.org/wiki/Earthquake

https://people.uwec.edu/jolhm/EH/Toivonen/types.htm

Stage 5 (8 minutes)

Teacher asks a few questions to find out the level of understanding.

Reading comprehension is also tested by exercises in Activity 3.

Task 3.

Read the sentences about Earthquakes. Are these sentences T(true) or F(false)? If the sentence is false, correct it.

1. Earthquakes come in little forms.	
2. Earthquakes can happen anywhere, land or sea.	
3. An earthquake (also known as a quake, tremor or temblor) is the shaking of the surface of the Earth, resulting from the sudden release of energy in the Earth's lithosphere that creates seismic waves.	
4. When the epicenter of a large earthquake is located offshore, the seabed cannot be displaced sufficiently to cause a tsunami.	
5. Earthquakes can also trigger landslides, and occasionally volcanic activity.	
6. There are only two different types of earthquakes: tectonic and explosion.	
7. A volcanic earthquake is one that occurs when the earth's crust breaks due to geological forces on rocks and adjoining plates that cause physical and chemical changes.	
8. A tectonic earthquake is any earthquake that results from tectonic forces which occur in conjunction with volcanic activity.	
9. A collapse earthquake are small earthquakes in underground caverns and mines that are caused by seismic waves produced from the explosion of rock on the surface.	
10. An explosion earthquake is an earthquake that is the result of the detonation of a nuclear and/or chemical device.	

Stage 6 (2 minutes) – Writing activity

Writing could be set for homework. Students should write an essay on the topic "What to do before, during, after an earthquake?"

They can use the following links:

https://www.youtube.com/watch?v=gZ9T2e7GFxg

http://www.geo.mtu.edu/UPSeis/bda.html

https://www.fema.gov/media-library-data/1500603026571-229c0197f44506fd6153211215826b76/What_To_Do_Fact_Sheet_Revised_July_2017.pdf

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Did you learn new things during the lesson?				
2. Did you have enough time to do the activities?				
3. Were the activities interesting for you?				
4. Did you take part in the lesson?				
5. Did the lesson help you improve your vocabulary on the topic?				
6. Did the lesson help you improve your				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Lesson 3 – Urbanization in the world

INTRODUCTION

Urbanization is the social process by which towns and cities are formed and become larger as more people start living and working in central areas. Urbanization is very common because people want to move closer to towns and cities and get better social and economic conditions, such as better healthcare, sanitation, housing, business opportunities, and transportation.

The proportion of urban population is referred to as the urbanization rate.

Positives of urbanization:

1. availability of all types of services;
2. the cities became centers of cultural and social life;
3. great educational opportunities – high concentration of all types of schools.

Negatives of urbanization:

1. too high concentration of people in a small space;
2. pollution of the environment;
3. high level of crime;
4. spread of communicable diseases;
5. increasing the amount of municipal waste or the problem of drinking water and canalization.

Lesson: Geography

Topic: Urbanization in the world

Objectives:

1. Practice of vocabulary related to urbanization.
2. Practice of listening, speaking, reading and writing skills.
3. Development of technical skills and ability to compare, contrast things, places.

Time available: 45 minutes (1 hour)

Form of students: 2nd grade students

Assumptions:

- students can work with map, atlas of the world, internet;
- they know the concept of the continent.

Prior knowledge: vocabulary related to the topic

Materials and equipment:

- the Internet;
- smart board;
- overhead projector.

Methods:

- debate;
- discussion;
- individual work.

Stage1 (15 minutes) Motivation – for given topic

Introductory text can be found on the Internet: http://www.unfpa.org/urbanization.

„The world is undergoing the largest wave of urban growth in history. More than half of the world's population now lives in towns and cities, and by 2030 this number will swell to about 5 billion. Much of this urbanization will unfold in Africa and Asia, bringing huge social, economic and environmental transformations.

Urbanization has the potential to usher in a new era of well-being, resource efficiency and economic growth. But cities are also home to high concentrations of poverty. Nowhere is the rise of inequality clearer than in urban areas, where wealthy communities coexist alongside, and separate from, slums and informal settlements."

Discussion with students about the main topic – urbanization

Proposed questions:

1. What does the word " urbanization" mean ? Try to explain it on your own.
2. Why do people prefer living in the cities to living in the country ?
3. Is the process of urbanization the matter of developed countries or it occures only in some parts of the world?
4. Which part of the world has the fastest growth of the cities?

Proposed answers:

1. Urbanization is the social process of creating and development of the city way of life and/ or increasing of number of inhabitants living the city life .It is also the process of concentration and movement people from the country to the cities The rate of urbanization can be calculated as the quotient of number of people living in the cities and whole population of the state .
2. Job opportunities, cultural possibilities, education, health care, transport advantages.
3. It occures all over the world.
4. In Asia and Africa.

Stage 2 (15minutes) Work on the Internet

Students look at the map on the Internet:

http://luminocity3d.org/WorldCity/#3/12.13/10.02 .

This map shows the increase of the number of inhabitants after 1950 with expected development up to 2030.

Teacher shows students some cities, for example Dillí, Sao Paulo, Lagos. After the click on the city students can see the graph of the number of inhabitants along with the number of inhabitants in 1950, 1990, 2015 and 2030. Teacher shows students other possibilities of an interactive map. Following activities are done by students and recorded into the student´s worksheet.

Questions:

1. Which continent has the most cities with more than one million inhabitants ?
2. Which city is the biggest in the world ? How many inhabitants does it have ? (use data from 2015)
3. Name 8 cities situated in Asia which belong to 12 biggest cities in the world .
4. Which of them are situated in India ? Name them.
5. Name first three cities with the biggest increase of population within 25 last years.
6. Which country has the biggest rate (growth) of urbanization ? (use data from 2015)

Answers:

1. In Asia.
2. Tokyo. 38.0 million.
3. Tokyo, Delhi, Shanghai, Mumbai, Beijing, Osaka, Dhaka, Karachi.
4. Delhi, Mumbai, Karachi.
5. Delhi, Shangai, Beijing.
6. Japan.

Stage 3 (5minutes) Discussion

Students look at the picture of the slum in Mumbai in India.

Questions:

1. What can you see in the picture ? Do you know the meaning of the word "slums" ?
2. Where are slums situated?
3. Why do people live there ?
4. Which problems could appear in this type of urbanization ?
5. Do you know the world "urbanization"?

Answer:

1. Slums are densely inhabited poor quarters with lots of houses which were built illegally. Slums are usually situated in the suburbs of poor countries cities.
2. In Asia, Latin America.
3. Dreams about better living in a city.
4. Criminality, unemployment, illnesses, a lack of possibilities of education for children.
5. Suburbanization („suburbs") – expansion of the city away from the center.

Stage 4 (8 minutes) Listening

Students watch a short film about living in slums.

https://www.youtube.com/watch?v=LlzvmA0VYnU

Discussion about the movie.

Stage 5 (2 minutes)

Homework. Write an essay : "Advantages and disadvantages of living in a big city".

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Did you learn new things during the lesson?				
2. Did you have enough time to do the activities?				
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b) writing skills?				
c) listening skills?				
d) reading skills?				

Lesson 4 – Types of settlements

INTRODUCTION

Most people do not live alone. They live in hamlets, villages, farms, smaller or bigger towns.

The first human settlements came into existence when people stopped nomadic way of life and they became farmers from hunters. Natural conditions were the main reasons considered when starting the settlements / water, fertile soil, forests, minerals ... /

Localization of settlements from the defence point of view / on the hill, on the Island ... / and business trips.

In this lesson we look closer at various types of settlements in the world.

Lesson: Geography

Topic: Types of settlements

Objectives:

1. Practice of vocabulary related to settlements.
2. Practice of listening, speaking, reading and writing skills.
3. Get to know various types of settlements.

Time available: 45 minutes (1 hour)

Form of students: 2nd grade

Prior knowledge: vocabulary related to the topic

Materials and equipment:

- map;
- the Internet.

Methods:

- group work;
- individual work;
- discussion.

Stage1 (5 minutes) Motivation – introduction into the theme

At first we divide the students into smaller groups, consisting of 4 – 6 people.

We show them various pictures of settlements and ask students to name them.

Task 1.

Town, city, hamlet, village.




We ask students to characterize the settlement using one sentence.

Possible answers:

- The place, where people work.
- The place, where people live.
- Where they attend schools.

Stage 2 (10 minutes) Individual work. Students use prepared papers.

Students think of the functions of the settlements. Which functions has rural settlement , which has urban settlement. We can choose the specific village and town, familiar to all the students. We can give an example of the function of the town, in which students live. At the end of this activity one student of each group presents the ideas.

Students should mention the possible functions: industrial, residential, cultural, administrative, educational, traffic, spa, recreational, agricultural, financial, etc.

Stage 3 (15 minutes)

In this part of the lesson students get to know various types of settlements and their brief characteristic.

Students are asked to read the text.

Task 2.

Megalopolis - a group of conurbations, consisting of more than ten million people each.

Conurbation - a group of large cities and their suburbs, consisting of three to ten million people.

Metropolis – a large city and its suburbs consisting of multiple cities and towns. The population is usually one to three million.

Large city – a city with a large population and many services. The population is less than million people but over 300,000 people.

City – a city would have abundant services, but not as many as a large city. The population of a city is between 100,000 and 300,000 people.

Large town – a large town has a population of 20,000 to 100,000.

Town – a town has a population of 1,000 to 20,000.

Village – a village is a human settlement or community that is larger than a hamlet but, smaller than a town. A village generally does not have many services, most likely a church or only a small shop or post office. The population of a village varies however, the average population can range from hundreds to thousands.

Hamlet – a hamlet has a tiny population (<100) and very few (if any) services, and few buildings.

Isolated dwelling – an isolated dwelling would only have 1 or 2 buildings or families in it. It would have negligible services, if any.

(https://en.wikipedia.org/wiki/Settlement_hierarchy)

Questions related to the text:

Name at least two examples for each type of settlements in your region, country.

Students work again in groups. They can use the map or the Internet.

Stage 4 (15 minutes)

Students watch the video:

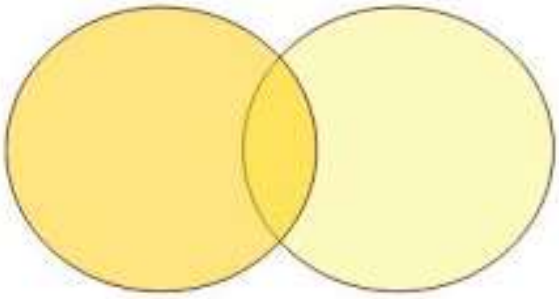
https://www.youtube.com/watch?v=orqgsTFcoos

Individual work related to the video. Students continue working in smaller groups.

They get a sheet of paper with two overlapping circles. They write the advantages of living in a town into one of them, the advantages of a village into the other one and advantages which are common for the village and also the town into the overlapping part of the circles.

We should remind them to think of various aspects of rural life, like economic, social and environmental.

At the end of this stage students have time to present their works.



Evaluation of the lesson

question	poor	satisfactory	good	excellent
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6. Did the lesson help you improve your				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Lesson 5 – Tourism

INTRODUCTION

Tourism includes all forms of travel, in a native country and also abroad. The aim of such a travel is relaxing, getting to know new countries and people, cultural needs, sports activities, having fun, discovering new places, etc.

Under the term tourism we understand a set of activities aimed at meeting the needs of travelling and staying outside the place of permanent residence. Today, tourism is a major source of income for many countries and affects the economy of both the source and host countries.

Types of tourism:

- Recreational (recreation, walking, nature and sightseeing, ...)
- Sports and adventure (hiking, skiing, rafting, visiting sporting events, ...)
- Cultural (visit of museums, monuments, festivals, exhibitions, pilgrimage places, business meetings, study abroad, ...)
- Spa and health (treatment, prevention, body and beauty care, rehabilitation activities, ...)
- Business – congress (business meetings, trainings, seminars, conferences, fairs, exhibitions, ...)

In real life, kinds of tourism do not occur in pure form, but in combination, one being dominant.

Localization assumptions

They can be divided into:

- natural – these include, in particular, relief, altitude, position within the light, climate, occurrence of surface and ground water, representation of plant and wild life;
- cultural – tourists are mainly interested in architectural monuments, museums, galleries, technical monuments, important parks, monuments of folk architecture, archaeological sites.

Lesson: Geography

Topic: Tourism

Objectives:

1. Practice of vocabulary related to tourism.
2. Practice of listening, speaking, reading and writing skills.
3. To know the importance of tourism for people and for the countryside.

4. To know the important cities of Europa and their monuments.

Time available: 45 minutes (1 hour)

Form of students: 2nd grade

Assumptions :

- students can work with map, atlas of the world, internet, text.

Prior knowledge: vocabulary related to the topic.

Materials and equipment:

- map;
- the Internet ;
- smart board;
- overhead projector .

Methods:

- group work;
- individual work;
- discussion;
- controlled interview.

Stage1 (10 minutes) – introduction into the theme – group work

We divide the students into groups consisting of 2 – 4 people. Each group gets photographs of several towns/cities and texts describing them (texts are prepared on individual cards). Their task is to match the photo with the description and also to write the name of the city. Students are given a wider choice, the teacher decides himself how many materials to provide. The students should do the task quite fast because it is not necessary to read the whole text to match the photo and the text. (Work with text appears also in another part of the lesson).

The photos are chosen from web page: www.widest.com/visited-cities-europe

The descriptions come from these websites:

http://www.travelandleisure.com/worlds-best/cities-in-europe#madrid-spain

https://www.thetalkingsuitcase.com/20-things-to-know-before-visiting-london/

https://theculturetrip.com/europe/greece/articles/15-facts-about-athens-that-will-amaze-you/

https://wikitravel.org/en/Paris

https://www.spain-holiday.com/Barcelona-city

Match the photo with the description

Some of the top city attractions include The London Eye, Tower Bridge, the Tower of London, St. Paul's Cathedral, Westminster Abbey, Buckingham Palace and the Tate Museum.

A main stop on any Athens tour is the New Acropolis Museum, which resides near the base of the hill overlooking the city. It has the largest collection of Greek architecture and ancient sculptures including statues of the goddess Athena and "Kritios Boy." The museum was originally scheduled to be built in time for the 2004 Olympics, but its completion was delayed due to legal battles. The museum has five floors that showcase 4,000 artifacts.

Permanent exhibitions here include the Parthenon Frieze, Athena statue, Color the Peplos Kore, Parthenon Gallery and Athena Nike.

Located in the north of France on the river Seine, Paris has the well – deserved reputation of being the most beautiful and romantic of all cities, brimming with historic associations and remaining vastly influential in the realms of culture, art, fashion, food and design .A large part of the city, including the River Seine, is a UNESCO World Heritage Site. The city has the second highest number of Michelin restaurants in the world (after Tokyo) and contains numerous iconic landmarks, such as the world's most visited tourist site the Eiffel Tower, the Arc de Triomphe, the Notre – Dame Cathedral, the Louvre Museum, Moulin Rouge, and Lido, making it the most popular tourist destination in the world with 45 million tourists annually.

Rome is one of world's most photogenic cities – not surprising when you consider what's here: The Vatican, the Trevi Fountain, St. Peter's Square, Spanish Steps, Colosseum.

Barcelona offers so much to the cultural visitor, there is so much to see, something new and interesting awaits around every corner: Gothic architecture, the famous Las Ramblas avenue, Gaudi's Parc and the unfinished La Sagrada Cathedral, the old Ravalquarter, La Ribera and La Barceloneta, a beach side ravel of corridor style streets where you can find some fantastic local restaurants and bars, away from the typical tourist area.

<u>Stage 2 (10 minutes)</u> Discussion

In this part of the lesson the teacher leads the controlled conversation with the aim to guide the students to the term tourism.

The teacher´s question:

- The cities, shown in the photos, have something in common. Try to name them.

Possible/expected answers:

- The cities lie in Europe.
- They are all big cities.
- They have a lot of historical sights, etc.

The teacher´s question:

- Are these cities visited by many tourists?

Expected answer : yes

The teacher:

- Why do people visit them?

Expected answer:

- Tourists visit historical sights, museums, galleries, and so on.

The teacher:

- We can conclude that these cities have highly developed tourism.

The teacher:

- What reasons do people travel for?
- Is it only getting to know historical sights?

Expected answer :

- To have a rest, we travel most often to the sea.
- To have sports activities – hiking, skiing, watersports.
- We want to get to know new cultures, way of life of people living in different foreign countries.

Stage 3 (10 minutes) Individual work.

We ask the students to read the texts (they have matched with the photos) carefully once again .

Using the information from the text they draw up a worksheet.

Match the attraction with the city and the country.

Atraction	City	Country
Tower Bridge	London	Great Britain
Trevi Fountain	Roma	Italy
La Sagrada Cathedral	Barcelona	Spain
Westminster Abbey	London	Great Britain
Notre – Dame Cathedral	Paris	Paris
Acropolis Museum	Athens	Greece
Spanish Steps	Roma	Italy
Gaudi´s Parc	Barcelona	Spain
Louvre	Paris	France
Athena statue	Athens	Greece

The check: the teacher projects worked out sheet on the computer.

Stage 4 (15 minutes) Group work

Task for students : Groups of students have to create advertising leaflet/poster promoting any place they want (spa town, city, mountains, even country or specific region in the country) and would like to visit one day. They describe the place briefly but concisely. Each

group should have different tasks. Students can use internet search engine. At the end of the lesson each group presents their work. Students can evaluate each other and choose the best poster.

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Did you learn new things during the lesson?				
2. Did you have enough time to do the activities?				
3. Were the activities interesting for you?				
4. Did you take part in the lesson?				
5. Did the lesson help you improve your vocabulary on the topic?				
6. Did the lesson help you improve your				
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b) writing skills?				
c) listening skills?				
d) reading skills?				

Unit 6 – Biology

Lesson 1 – Structure and role of nucleic acids

INTRODUCTION:

Looking at a mother and her daughter one might ask a question, what factor caused that the daughter's eyes are alike her mother's and both women hair color is identical. It was already in the 19th century when the Chech monk Gregory Mendel, based on his research claimed that some features are inherited by organisms according to strictly definite rules. It was later on when the factors which allowed to pass from one generation to another were called genes. Following in the 1940's many American scientists such as Oswald Avery, Colin McLeod and Maclyn McCarty, discovered that genes were built of one type out of two main ribonucleic acids - from DNA.

Nucleic acids consist the group of chemical substances which play a significant role in every organism functioning and its mechanisms of inheritance found among any other beings.

One of the nucleic acids is deoxyribonucleic acid (DNA). It was on 25th April 1953 when a prestigious scientific magazine „Nature" published thesis called „A Structure for Deoxyribose Nucleic Acid", by the British author Francisa Cricka together with his American colleague James Watsona. The work gave a description of DNA structure.

Apart from DNA there exist varieties of ribonucleic acid (RNA). Any nucleic acid consists of units (monomers) , called nucleotides. They combine with each other to form chains.

Lesson: Biology

Topic: Structure and role of nucleic acids

Objectives:

1. Students revise names of nucleic acids.
2. Students give details on the structure of a nucleotide.
3. Students give details on the structure of DNA i RNA.
4. Students explain what is the basis of complementary rules.
5. Students compare DNA i RNA based on their structure and function.
6. Students label in capitals the order of nucleotides as the part of DNA and RNA chain complementary to the appointed one.
7. Students will acquire skills of group work.

Time available: 45 minutes (1hour)

Form of students: middle school students 14 years of age

Prior knowledge: Students should already know:

1. They can explain the terms of: genetics, inheritance, changing.
2. They know about the factors which determine living organism features.

3. They can explain the functions of proteins in living organisms.

Materials and equipment:

- source text provided for each student;
- worksheets for each student;
- mental map scheme of RNA provided for each student;
- transparent plastic foil with the scheme of RNA mental map;
- graphic display unit;
- envelopes (number depends on group limit) containing memory game cards.

Methods:

- discussion;
- work with the source text;
- mental map;
- didactic game.

Stage 1 (5 minutes)

Teacher asks the students questions to revise their previous knowledge, necessary to introduce New topic:

1. What factors determine living organisms features?
2. Information on compounds included in genetic material?
3. What is the function of proteins in living organisms?

Suggested answers:

1. Genetic and environmental factors influence living organisms features.
2. Genetic material contains information about proteins structure.
3. Proteins play many significant functions in living organisms e.g.:
    - building – they build cell and tissue structures of living organisms;
    - transport – they enable to transport substances umożliwiają transport wielu substancji;
    - regulator – they regulate physiological processes;
    - catalytic – they decide about the processes of all bio-chemical reactions in living organisms;
    - immunological – they prevent organisms from micro-organisms.

Teacher explains that genetic material is a chemical compound called deoxy nucleic acid DNA for short. It contains information on the structure of the living organism proteins.

Stage 2 (5 minutes)

1. Teacher gives students handouts and the source materials.
2. Individual work. Students start work with task 1 in their worksheets.

Students give the name of a basic unit of DNA structure and then write down names of its elements and label accordingly in the chart with numbers 1 – 3.

3. Students move onto task 2 in their worksheet.

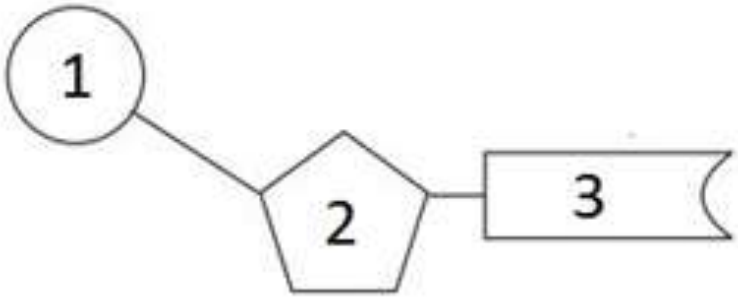
They give names of four nitrate basics which can be found in DNA. Following they fill in the missing part of DNA structure with complementary units.

Suggested answers:

1. The scheme presents a basic unit of DNA structure – DNA nucleotide.

Elements of DNA:

1. nitrate basic;
2. deoxy ribose;
3. phosphorus acid radical.



2. Nitrate basics: adenine, guanine, thymine, cytosine.

A — T

G — C

C — G

G — C

T — A

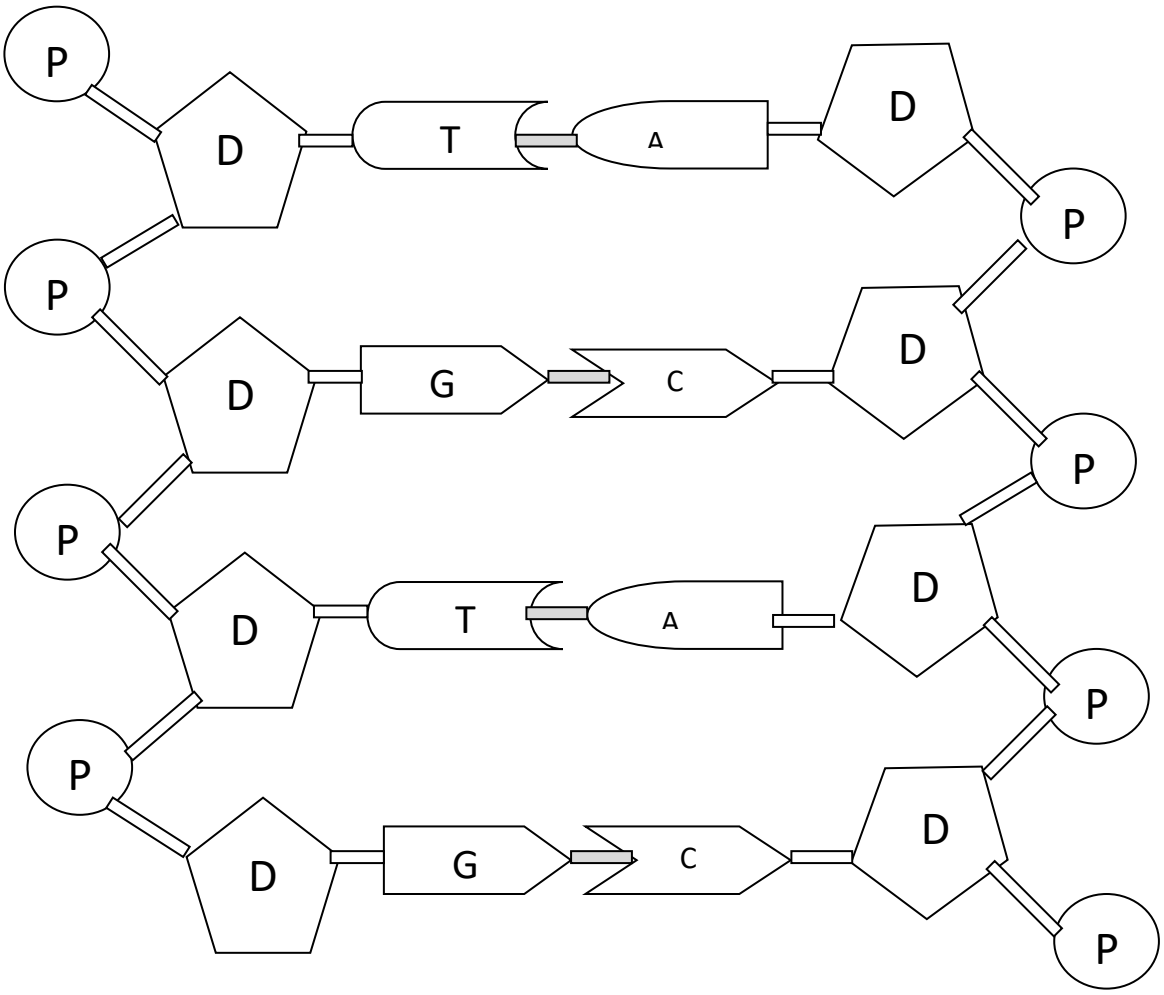
A — T

T — A

<u>Stage 3 (5 minutes)</u>

1. Students work in groups of four.
2. Teacher gives envelopes containing a jigsaw of DNA structure.
3. Students in groups based on the text make a DNA model out of the given elements.

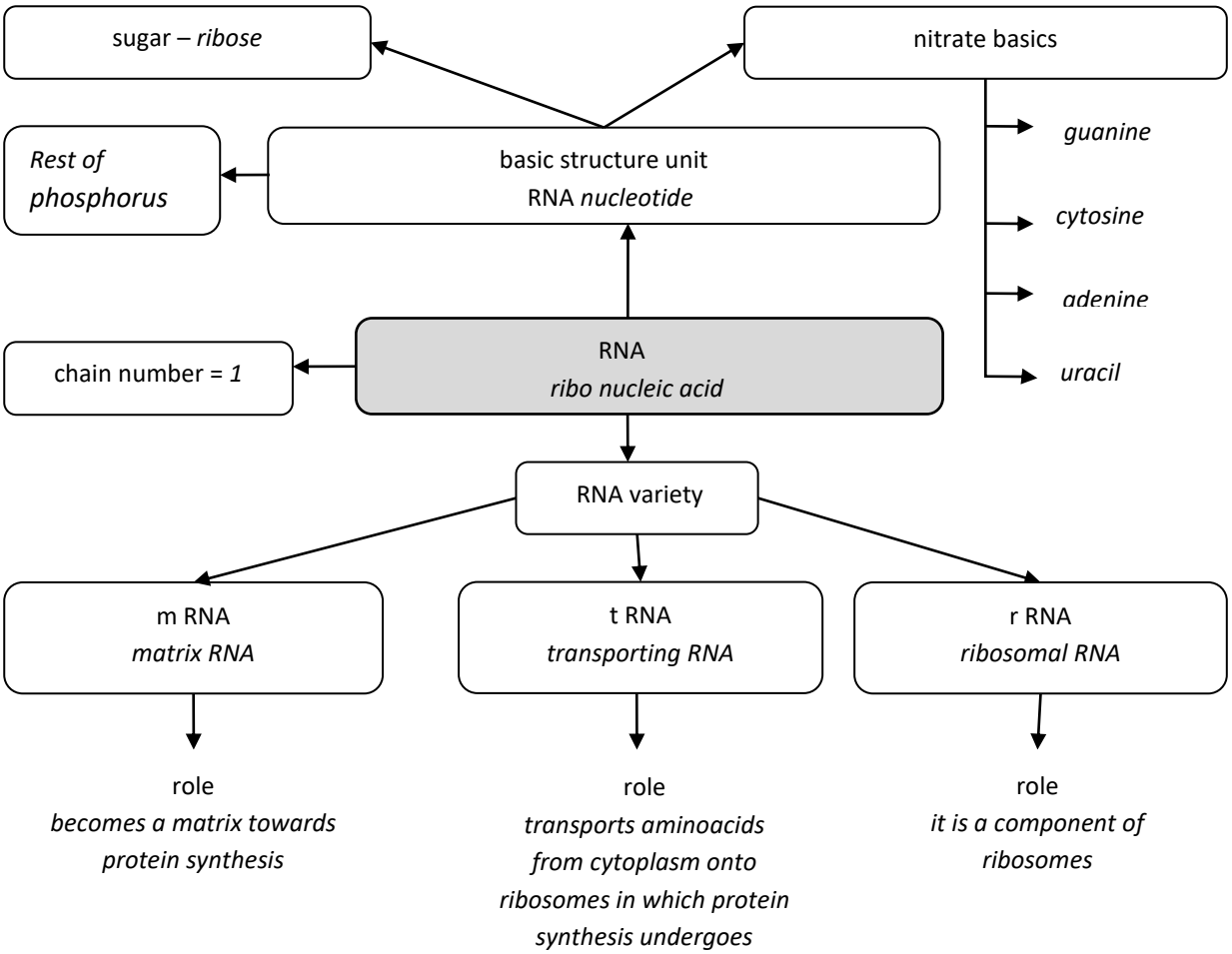
Suggested answers:



Stage 4 (10 minutes)

1. Teacher gives schemes of mental maps presenting Structure and function of RNA
2. Using the source text students fill in the mental maps.
3. Teacher displays an incomplete scheme of the mental map.
4. Asks individual students for the missing information to be filled in each gap.
5. Others check their correctness in their own maps.

Suggested answers:



Stage 5 (15 minutes)

1. Work in groups of four.
2. Teacher gives handouts of envelopes with memory game cards.
3. Teacher explains the game rules:

Cards from the envelope need to be taken out and put on the tables face down. Each student picks up 2 cards looking for their pairs – one card from each pair contains headword and the other one its definition and description. After a student finds a pair he takes them and picks out another two cards. In case he chooses cards which are inappropriate he puts them back in the same place face down and it is another person turn to choose. The winner is the student who collects the highest amount of correct pairs.

4. Students start the game.
5. While students play the game the teacher comes to their tables and checks for accuracy of the headwords and their meanings.

Suggested answers:

deoxsy ribosis	sugar found in DNA
ribosis	sugar found in RNA

thymine	nitrate base found only in DNA
uracil	nitrate base found only in RNA
nucleotide	DNA and RNA structure unit consisting of nitrate base, phosphoric acid radical and sugar
DNA	nucleic acid built of two threats
RNA	single threat nucleic acid
G	Guanine
C	Citosine
A	Adenine
adenine and thymine	a pair of complementary DNA base
adenine and uracil	a pair of complementary

Stage 6 (5 minutes)

Teacher asks students to fill in the chart based on the pictures presenting the building structure of DNA and RNA molecule.

Suggested answers:

feature compared	DNA	RNA
full name	deoxy ribonucleic acid	ribonucleic acid
names of nitrate base	adenine guanine citosine thymine	adenine guanine citosine uracil
name of sugar	deoxyribosis	ribosis
number of threats which constituent a unit	2	1

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Did you learn new things during the lesson?				
2. Did you have enough time to do the activities?				
3. Were the activities interesting for you?				
4. Did you take part in the lesson?				
5. Did the lesson help you improve your vocabulary on the topic?				
6. Did the lesson help you improve your				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Lesson 2 – Interaction: Senses and Nervous System

Subject: Biology & Geology

CLIL Unit: Interaction: Senses and Nervous System

Objectives:

1. Recognize the main concepts associated with the nervous system.
2. Differentiate between effectors and receptors
3. Identify the main parts of the brain and their anatomical situation in this organ.
4. Know the importance of the neurons as the basic cells of the nervous system and understand how they transmit the information by electrical impulses.

Methodology:

In this introductory class, we have planned activities to work with listening, reading & comprehension and speaking. We also introduce new technologies where students have to investigate about something new for them and finally elaborate a product that will be described in class, always working in groups.

Age/level of students: Third ESO course. About 15 years old.

Material & equipment: Digital board and computers, tablets or mobiles.

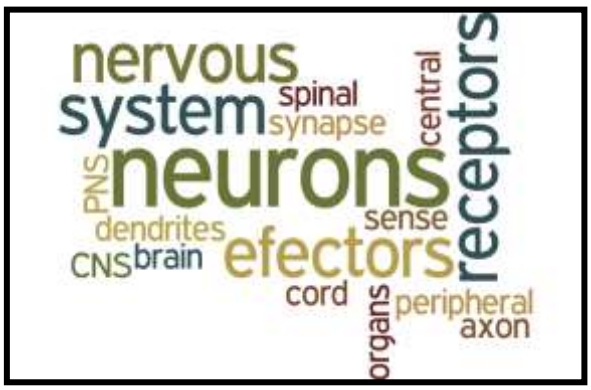
Temporality:

The class is divided in four stages as follow:

Stage 1 (10 minutes)

INTRODUCTION ACTIVITY

First teacher will show the next word cloud including the most important concepts about nervous system.



Then student discuss about their previous ideas. First in pairs and then all the class.

Teacher will take note in the blackboard about their main ideas.

Stage 2 (15 minutes)

Watch the next video about the topic we´re studying.

http://www.bbc.co.uk/schools/gcsebitesize/science/aqa/nervesandhormones/thenervoussystemact.shtml

It includes some questions and interactive activities about the most important contents.

Depending on your students listening skills, you can click the subtitles on or even play the video twice.

Stage 3 (10 minutes)

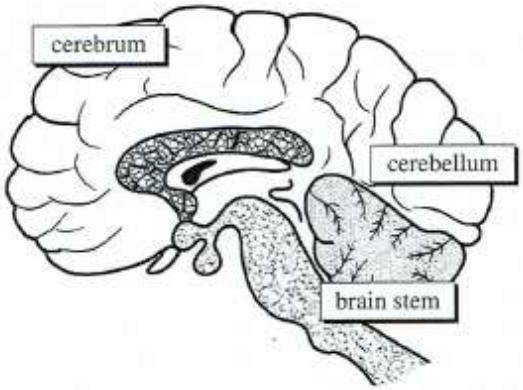
READING ACTIVITY

Read the text and answer the next questions.

THE BRAIN

An adult human brain weighs about 1,400 grams. It is found in the top part of the skull and is protected by the skull bones. There are three main parts of the brain: the cerebrum, the cerebellum and the brain stem.

The cerebrum is the largest part of the brain. It has two halves called the left and right hemispheres. Some of the things the cerebrum controls are language, eating, drinking, sleeping, memory and emotions.



The cerebellum is about the size of a pear. It is found under and behind the cerebrum. The cerebellum controls muscle movement, balance and co-ordination.

The brain stem is at the bottom of the brain above the neck. It controls automatic body functions such as breathing, heartbeat and digestion.

The brain is constantly dealing with messages from the environment. It gets these messages from the senses – seeing, hearing, smelling, tasting and touching. The messages travel along neurons to the grey cells in the brain. The brain interprets the messages and tells the body what to do, sending instructions along the neurons to different parts of the body. Unlike broken bones or cut skin, the brain cannot repair itself, so it is important to protect it. For example, you should always wear a helmet when riding a bike or skateboard, and for sports like baseball and horse-riding.

1. Complete the chart.

Suggested answers:

Part	Location	Function
1. cerebrum	above the cerebellum	2. controls language,eating, memory, etc.
cerebellum	3.under & behind the cerebrum	4. controls movements and coordination
5. brain stem	6. at the bottom of the brain	controls automatic functions

2. What is the main function that neurons do in the nervous system?

Suggested answers:

They are the cells were the messages travel in our body.

Stage 4 (20 minutes)

LET´S INVESTIGATE

Using your computers, tablets, mobiles find information about neurons and how they transmit the electric impulses. Then, draw a picture of a neuron including their main parts.

If there are enough PCs, is better they do it in pairs. They have to include the function of the neuron, types and the transmission of the nerve impulses.

Function: it generates ant transmit nerve impulses. They are the main cells of the nervous system. They are extremely specialized cell so they cannot make the cell division.

Types:

Sensory neurons: send information from the receptors to the Central Nervous System (CNS).

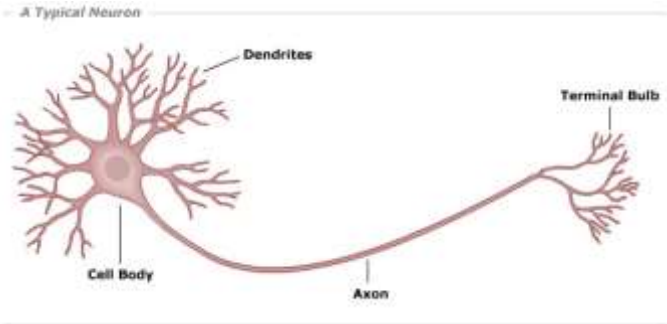
Motor neurons: send the responses from the CNS to the effectors, causing muscle contractions or gland secretions.

Relay neurons: connect sensory and motor neurons.

Transmission:

Students have to include the SYNAPSE, describing how it happens and the role of neurotransmitters in this process.

PICTURE OF NEURON



Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Did you learn new things during the lesson?				
2. Did you have enough time to do the activities?				
3. Were the activities interesting for you?				
4. Did you take part in the lesson?				
5. Did the lesson help you improve your vocabulary on the topic?				
6. Did the lesson help you improve your				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Unit 7 – Chemistry

Lesson 1 – Are all salts water – soluble?

INTRODUCTION:

Have you ever thought of salt solubility? Are all salts water- soluble or only some of them? It appears that not all salts are water – soluble. Salts which are non – soluble in water form deposits. They are obtained during a chemical precipitation reaction which is based on mixing acid with salt, base with salt or salt with another salt which results in obtaining salt which has water non – soluble features. During precipitation reaction all the reagents used must be water soluble except for one product (once we want to obtain non – soluble salt it means that it will be the same salt), which forms deposit. These reactions are registered in mollecular, full ionic or shortened ionic form. Salts which are non – soluble in water do not dissociate, which means that they do not disintegrate into ions, in ion record dissociation is not statedi. The remaining deposit is marked symbolically as ↓.

Lesson: Chemistry

Topic: Are all salts water – soluble?

Objectives:

1. Students are going to find out what the precipitation reaction is based on and its mechanism.
2. Students on the basis of their experiments divide salts into well and difficult water-soluble.
3. Students will gain experience in doing simple chemical experiments.
4. Students will learn how to formulate and state conclusions based on their observation.
5. Students will acquire group skills.
6. Students will learn how to analyse and interpret the table of solubility.
7. Students will acquire experience in writing chemical reactions equations.

Time available: 45 minutes (1 hour)

Form of students: 10th grade students

Prior knowledge: Students should already know:

1. what are the formuli for the salts;
2. that there are chemical reactions which result in compounds which are hard to dissolve in water.

Materials and equipment:

- 4 little containers;
- distilled water;
- 6 test tubes;
- spoon;

- constant salts: $NaCl, CaSO_4, CuSO_4, CaCO_3$;
- water solutions of the following salts: $CaCl_2, K_2CO_3, AgNO_3, KI, NaCl, KNO_3$;
- water solution of HCl;
- board;
- pencil;
- eraser.

Methods:

- learning by doing;
- experiment;
- debate.

Stage 1 (5 minutes)

1. Do you remember a chemical reaction when a colorless solution of $Ca(OH)_2$ became cloudy when administered with CO_2? Write down the reaction.
2. Why did the solution become cloudy? Which of the products caused such reaction?

Suggested answers:

1. Yes I remember the reaction: $Ca(OH)_2 + CO_2 \rightarrow \downarrow CaCO_3 + H_2O$
2. The solution became cloudy as there precipitated salt deposit hard to dissolve in water – calcium carbonate $CaCO_3$.

Stage 2 (10minutes)

The chemical experiment is conducted in groups of 4 – 5 students. The other tasks they perform individually.

1. Into 4 containers with water add using a spoon little amounts of the following salts: $NaCl, CaSO_4, CaCO_3, CuSO_4$. Make a record of your observation and write down conclusions.
2. Salts can be divided into:
   - ..... e.g. .....
   - ..... e.g. .....

Suggested answers:

1.

Salt	Salt formula	Observation	Conclusion
Sodium chloride	$NaCl$	Salt dissolves in water	$NaCl$ is well water – soluable salt
Calcium carbonate	$CaCO_3$		$CaCO_3$ is hard water – soluable salt
Calcium sulfate (VI)	$CaSO_4$	Salt dissolves in water	$CaSO_4$ is well water – soluable salt
Copper (VI)sulfate (II)	$CuSO_4$	Salt dissolves in water	$CuSO_4$ is well water – soluable salt

2. Salts can be divided into:
   - well water – soluble e.g. $NaCl, CaSO_4, CuSO_4$;
   - hard water – soluble e.g. $CaCO_3$.

Stage 3 (5 minutes)

1. Using the table of solubility below find our if the following salts are water – soluble: $CuS, NaNO_3, AgCl$.

	Bromide Br^-	Carbonate CO_3^{2-}	Chloride Cl^-	Chlorates ClO_3^-	Hydroxide OH^-	Nitrate NO_3^-	Oxide O^{2-}	Phosphate PO_4^{3-}	Sulfate SO_4^{2-}	Dichromate $Cr_2O_7^{2-}$
Aluminium Al^{3+}	S	X	S	S	I	S	I	I	S	I
Ammonium NH_4^+	S	S	S	S	S	S	X	S	S	S
Calcium Ca^{2+}	S	I	S	S	sS	S	sS	I	sS	I
Copper(II) Cu^{2+}	S	I	S	S	I	S	I	I	S	I
Iron(II) Fe^{2+}	S	I	S	S	I	S	I	I	S	I
Iron(III) Fe^{3+}	S	X	S	S	I	S	I	I	sS	I
Magnesium Mg^{2+}	S	I	S	S	I	S	I	I	S	I
Potassium K^+	S	S	S	S	S	S	S	S	S	S
Silver Ag^+	I	I	I	S	X	S	I	I	sS	I
Sodium Na^+	S	S	S	S	S	S	S	S	S	S
Zinc Zn^{2+}	S	I	S	S	I	S	I	I	S	I
	Bromide Br^-	Carbonate CO_3^{2-}	Chloride Cl^-	Chlorates ClO_3^-	Hydroxide OH^-	Nitrate NO_3^-	Oxide O^{2-}	Phosphate PO_4^{3-}	Sulfate SO_4^{2-}	Dichromate $Cr_2O_7^{2-}$

2. What is the table of solubility used for?

Suggested answers:

1. CuS – non soluble salt in water (deposit); $NaNO_3$ – salt well soluble in water; $AgCl$ – non – soluble salt in water (deposit).
2. The table of solubility is used for checking which compounds are well soluble in water and which ones are difficult.

Stage 4 (10 minutes)

Students carry out an experiment in groups of 4 – 5 while other tasks they do individually.

In 4 test tubes marked 1 – 6 there are solutions of the following salts:

1. calcium chloride ($CaCl_2$);
2. silver (I) nitrate (V)($AgNO_3$);
3. sodium chloride ($NaCl$);
4. potassium carbonate (K_2CO_3);
5. potassium iodide (KI);
6. potassium nitrate(V) (KNO_3).

Into test tube 1 containing $CaCl_2$ add solution from test tube 4 K_2CO_3.

Into test tube 2 containing $AgNO_3$ add solution from test tube 5 KI.

Into test tube 3 containing $NaCl$ add solution from test tube 6 KNO_3.

Make a record of your study including your conclusions and equations of the chemical reactions.

Suggested answers:

Salt 1	Salt 2	Obsevation
(1) $CaCl_2$	(4) K_2CO_3	Precipitation of deposit
(2) $AgNO_3$	(5) KI	Precipitation of deposit
(3) $NaCl$	(6) KNO_3	No changes observed

Conclusion:

In test tubes I i II precipitation reactions were observed while in test tube III no changes were observed

Equations of the chemical reactions:

1) molecular $CaCl_2 + K_2CO_3 \rightarrow\downarrow CaCO_3 + 2KCl$

1) ionic $Ca^{2+} + 2Cl^- + 2K^+ + CO_3^{2-} \rightarrow\downarrow CaCO_3 + 2K^+ + 2\,Cl^-$ or $Ca^{2+} + CO_3^{2-} \rightarrow\downarrow CaCO_3$

2) molecular $AgNO_3 + KI \rightarrow\downarrow AgI + KNO_3$

2) ionic $Ag^+ + NO_3^- + K^+ + I^- \rightarrow\downarrow AgI + K^+ + NO_3^-$ or $Ag^+ + I^- \rightarrow\downarrow AgI$

Stage 5 (5-10 minutes)

Students work in pairs: in a test tube mix a little amount of $Ba(OH)_2$ solution with Na_2SO_4, in another one mix a little amount of HCl solution with $AgNO_3$. Make a record of your observations, conclusions and equations of the chemical reactions.

Suggested answers:

Observation: In test tubes I and II deposit occurs.

Conclusions: In both test tubes precipitation reactions occurred.

Equations of chemical reactions :

- molecular (test tube I)

$Ba(OH)_2 + Na_2SO_4 \rightarrow\downarrow BaSO_4 + 2NaOH$

- ionic (test tube I)

$Ba^{2+} + 2OH^- + 2Na^+ + SO_4^{2-} \rightarrow\downarrow BaSO_4 + 2Na^+ + 2OH^-$ *or* $Ba^{2+} + SO_4^{2-} \rightarrow\downarrow BaSO_4$

- molecular (test tube II)

$AgNO_3 + HCl \rightarrow \downarrow AgCl + HNO_3$

- ionic (test tube II)

$Ag^+ + NO_3^- + H^+ + Cl^- \rightarrow \downarrow AgCl + H^+ + NO_3^-$ or $Ag^+ + Cl^- \rightarrow \downarrow AgCl$

Stage 6 (5 minutes)

What is the mechanism of a precipitation reaction?

Suggested answers:

Precipitation reaction is the one in which while mixing two compounds which are well water dissolvent there are two new compounds obtained – **one of them hard water – dissolvent**.

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Did you learn new things during the lesson?				
2. Did you have enough time to do the activities?				
3. Were the activities interesting for you?				
4. Did you take part in the lesson?				
5. Did the lesson help you improve your vocabulary on the topic?				
6. Did the lesson help you improve your				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Lesson 2 – What determines the rate of dissolution of the substance in water?

INTRODUCTION:

Have you ever wondered what the rate of solubility of the substance in water depends on? It turns out that many factors affect it.

The solubility in water is varied. Some substances are practically insoluble in water, others dissolve completely, and others are only limited. The rate of dissolution of a solid in water can be increased by:

- temperature increase (at a higher temperature molecules of solute and solvent have more energy, thanks to which they move faster and mix faster);
- mixing (allows for faster mixing of solute molecules with water molecules, which accelerates the dissolution of a solid in water);
- increasing the degree of fragmentation of a solid substance.

To dissolve the solid the quickest, all these factors should be used together: dissolve the substance ground in hot water while stirring the solution.

It should be noted that gases also dissolve in the water. The movement of water and rapid stirring it accelerates the dissolution of gases in water. However, in contrast to solids, raising the temperature reduces their solubility.

Lesson: Chemistry

Topic: What determines the rate of dissolution of the substance in water?

Objectives:

1. Students learn about factors affecting the dissolution rate of solid substances and gases in water.
2. Students will learn how specific factors affect the rate of dissolution.
3. Students will acquire experience in performing simple chemical experiments.
4. Students will learn to formulate observations and conclusions on their own.
5. Students will acquire the ability to work in a group.

Time available: 45 minutes (1hour)

Form of students: 9th grade students age level of English

Prior knowledge: the students should already know (that):

1. what is the dissolution of the substance;
2. know what it means that the substance dissolves more quickly in water;
3. interpret graphs.

Materials and equipment:

- 6 small beakers;

- water at room temperature;
- hot water;
- potassium manganite;
- crystal sugar and ground sugar;
- glass baguette;
- animation showing the effect of the factors on the rate of dissolution;
- board;
- pencil;
- eraser.

Methods:

- learning by doing;
- experiment;
- debate.

Stage 1 (5-10 minutes)

1. Do you know what dissolution is about?
2. Do you know what it means that the substance dissolves more quickly in water? How can you measure this speed?
3. How do you think what factors can accelerate the dissolution of a solid in water?

Suggested answers:

1. Dissolution is the mixing of substances, one of which is a solute and the other a solvent.
2. The speed is related to the dissolution time of the substance, i.e. that the more substance dissolves in a unit of time, then we can say that the substance dissolves faster. The dissolution rate could be measured, but to check how a given factor affects the dissolution rate it would be necessary at the same time dissolve the substance in 2 vessels, in one without the use of a given factor and in the other with the use of this factor.
3. temperature increase, mixing, fragmentation of a solid substance

Stage 2 (15minutes)

Students perform chemical experiments in 4 – 5person groups. The remaining activities are carried out by themselves.

1. To 2 beakers with cold and hot water, pour in a few crystals of potassium manganate (VII) – $KMnO_4$, and then record the observations and conclusions from the experiment.
2. Based on the drawing and computer animation regarding the effect of temperature on dissolution rate (https://www.youtube.com/watch?v=PjUNnTPor48), explain why temperature influences the rate of dissolution and steady state?
3. Give examples from everyday life, where you can observe the effect of temperature on the dissolution rate of the substance?
4. Explain how the temperature affects the dissolution rate of a solid (KMnO4) in water based on the plot.
5. What factors can accelerate the dissolution of a solid in water?

Suggested answers:

1. Observations: In a beaker with hot water we observe a faster color of water than in a beaker of cold water. Conclusions: The increase in temperature accelerates the dissolution rate of a solid in water.
2. At higher temperature molecules of solute and solvent have more energy, thanks to which they move faster and mix faster.
3. Dissolving sugar in hot tea, dissolving salt in hot water, etc.
4. As the temperature rises, the dissolution of $KMnO_4$ increases.
5. Temperature rise, mixing, material disintegration.

Stage 3 (5 minutes)

Work in groups of 4 – 5 people – up to 2 beakers with water, pour the same amount of sugar. In one beaker stir the water with a rod, do not mix the other. Write observations and conclusions.

Suggested answers:

Observations: In a beaker where sugar is stirred with a baguette, we observe the complete dissolution of sugar, in the second uninhabited sugar it stays on the bottom undone.

Conclusion:

Mixing accelerates the dissolution of the substance.

Stage 4 (5-10 minutes)

Work in groups of 4 – 5 people – up to 2 beakers with water at the same temperature, pour the same amounts of crushed sugar and crystal sugar. Leave the beakers for a while and observe in which case the sludge disappears from the bottom of the beaker more quickly. Write observations and conclusions.

What should you do to dissolve a solid the fastest?

Suggested answers:

Observations: In a beaker in crushed sugar, we observe a faster decay of the sediment.

Conclusion: The more dispersed the substance, the better it will dissolve.

To dissolve the solid matter as quickly as possible, it would be best to use all these factors together, i.e. dissolve the substance ground in hot water while stirring the solution.

Stage 5 (5 minutes)

1. Do the gases also dissolve in water?

Suggested answers:

Yes, the gases dissolve in water

2. What do you think in which of the given accidents the air dissolves the most in water:
   - in the rushing creek;

- in a pond or lake;
- in a quietly flowing river?

Stage 6 (5 minutes)

Explain using the graph the difference in the solubility of solids and gases depending on the temperature.

Suggested answers:

As the temperature increases, the solubility of solids increases.

As the temperature increases, the solubility of gases decreases.

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Did you learn new things during the lesson?				
2. Did you have enough time to do the activities?				
3. Were the activities interesting for you?				
4. Did you take part in the lesson?				
5. Did the lesson help you improve your vocabulary on the topic?				
6. Did the lesson help you improve your				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Unit 8 – Mathematics

Lesson 1 – Solving tasks with the use of linear equations

INTRODUCTION: The students:

1. will be able to use of linear equations;
2. analyze the stages of solving of solving a text task using the equation
3. solve text problems using first- order equations with one unknown;
4. read with understanding text containing numerical information;
5. perform initial steps to facilitate the task, including an auxiliary drawing or convenient to save information and data from the content of the task;
6. see the dependencies between the given information;
7. divide the task solution into stages, using its own popular, correct and convenient solution strategies;
8. to solve task embedded in a practical context, he applies the knowledge in the field of arithmetic and geometry and acquired accounting skills as well as own correct methods;
9. verifie the result of the text task, evaluating the reasonableness of the solution, e.g. by estimating, checking all the conditions of the task, evaluating the order of magnitude of the received result.

Lesson: Mathematics

Topic: Solving tasks with the use of linear equations

Objectives:

1. The students will learn how to prepare linear equation.
2. Solve tasks embedded in a practical context, using integrated knowledge in the field algebra and geometry.
3. The students apply equations for solving simple text.
4. The students use equations to solve unusual and complex text tasks.
5. The students analyze the stages of solving a text task using the equation.

Time available: 45 minutes (1 hour)

Form of students: 9th grade students age level of English

Prior knowledge: The students should already know (that):

1. solving basic linear equations;
2. calculating the arithmetic mean of the given numbers;
3. four operations (multiplication, division, addition and subtraction).

Materials and equipment:

- notebook;
- board;

- pencil.

Stage 1 (about 8 minutes)

In order to prepare students to face a text task or a problem, we suggest laying equations to simple situations.

Jane and Tom live 850 km apart. One day they both decide to meet at a location somewere between their cities. They meet after 5 hours. If Jane drove 70 km/h faster than Tom. How fast was each person going?

Suggested answer :

How fast was Tom going?

How fast was Jane going?

x – Tom's speed

$x + 70$ – Jane's speed

time is 5 hours

distance 850 km

$5x + 5(x + 70) = 850$

$5x + 5x + 350 = 850$

$5x + 5x = 850 - 350$

$10x = 500 /: 10$

$x = 50$ – Tom's speed

$50 + 70 = 120$ – Jane's speed

Stage 2 (about 8 minutes)

The sum of two numbers is 16. One number is 4 less than 3 times the other.

Suggested answer :

x – first number

$16 - x$ – second number

$x = 3(16 - x) - 4$

$x = 48 - 3x - 4$

$x + 3x = 48 - 4$

$4x = 44 /: 4$

$x = 11$ – first number

$16 - 11 = 5$ – second number

Stage 3 (about 8 minutes)

James had a farm with a certain number of oranges trees. He had to cut down 5 trees to control the insects. Each of the remaining trees produced 210 oranges producing a total harvest of 41790 oranges.

How many trees did James's farm have initially?

Suggested answer:

let x – trees of initially

$210\,(x - 5) = 41790$

$210x - 1050 = 41790$

$210x = 41790 + 1050$

$210x = 42810\ /: 210$

$x = 204$

Stage 4 (about 8 minutes)

The sum of three consecutive integers is 378. Find the integers.

Suggested answer:

x – first integer

$x + 1$ – second integer

$x + 2$ – third integer

$x + x + 1 + x + 2 = 378$

$x + x + x = 378 - 1 - 2$

$3x = 375\ /: 3$

$x = 125$

125 – first integer

$125 + 1 = 126$ – second integer

$125 + 2 = 127$ – third integer

Stage 5 (about 8 minutes)

During the tennis season, Olivia scored 55 points. She scored 5 fewer points than four times the number Sarah did. How many points Sarah score?

x – number of points scored by Sarah

Four times a number $4x$

5 fewer than we are subtracting 5 points

$4x - 5 = 55$

$4x = 55 + 5$

$4x = 60 \,/ : 4$

$x = 15$

Sarah scored 15 points.

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Did you learn new things during the lesson?				
2. Did you have enough time to do the activities?				
3. Were the activities interesting for you?				
4. Did you take part in the lesson?				
5. Did the lesson help you improve your vocabulary on the topic?				
6. Did the lesson help you improve your				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Lesson 2 – Mathematics: How to calculate the field and volume of the can? Cylinder

INTRODUCTION:

One of the oldest professions performed in the world is pottery, consisting in the production of everyday objects of clay, such as plates, jars and bowls. Some of the items made by the potter are created only by turning the clay on the so-called potter's wheel. Items so made are called spatial solids.

Rys.1. Jugs made of clay (www.garncarz.bialystok.pl)

Objectives:

1. Students will learn what rotational solids are.
2. Students learn about the construction of the roller.
3. Students will learn to distinguish the roller from other rotational solids.
4. The students will learn how to calculate the total area, the lateral area, the total base area of the cylinder.
5. The students will learn how to calculate the volume of the cylinder.
6. The students will acquire the ability to use the properties of the rolls in the tasks.

Lesson: Mathematics

Topic: How to calculate the field and volume of the can? Cylinder

Time available: 45 minutes (1 hour)

Form of students: middle school students

Prior knowledge: The students should already know (that):

1. pattern for the circumference and area of the circle;
2. Pythagorean theorem;
3. properties of a rectangle and a circle (circle).

Materials and equipment:

- board;
- pencil and ruler;

- overhead projector;
- notebook;
- animations depicting the cylinder and its mesh;
- a solid model.

Methods:

- learning by doing;
- individual and group work;
- discussion.

Stage 1 (5 – 10 minutes)

The teacher explains to pupils what rotational solids are, asks for examples of rotational solids in everyday life, shows models of various rotational solids.

Definition:

Solid of revolution – a spatial figure created by the rotation of a flat figure around a line called the axis of rotation.

Suggested answers:

Examples of solids: can, ball, cake, Leaning Tower of Pisa, pot, vase, road roller, ice cream cones, birthday hats, etc.

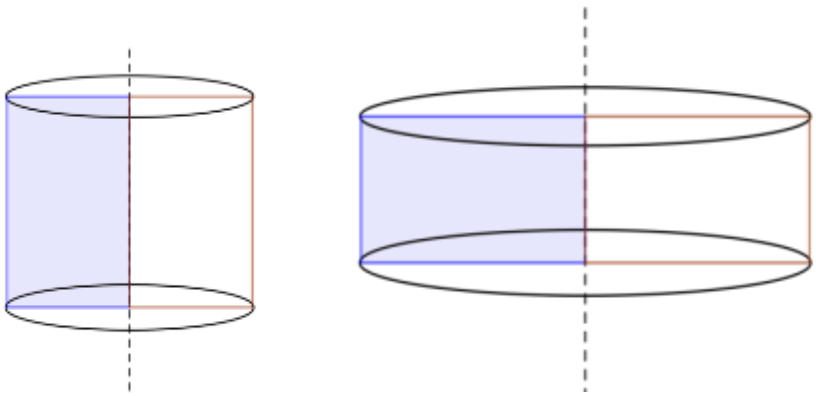
Stage 2 (5 – 10 minutes)

The teacher asks students to complete the task 1. Then he explains to them what the roller is, it shows his model. Then the students in the pairs fill the gaps below the picture in task 2.

Task 1. What solid will you get by rotating the rectangle around the long and short side? Make drawings.

Suggested answers:

The students made two drawings themselves a cylinders.



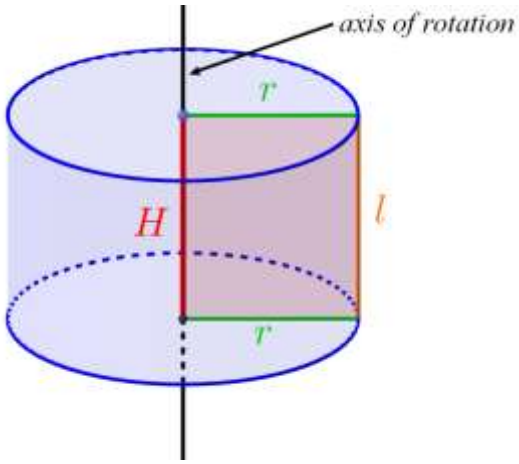
In both cases we received a similar shape called a cylinder.

Definition:

Cylinder – a solid of revolution was created by turning a rectangle around one of its sides.

Task 2. Fill the gaps.

Cylinder consists of the following elements:

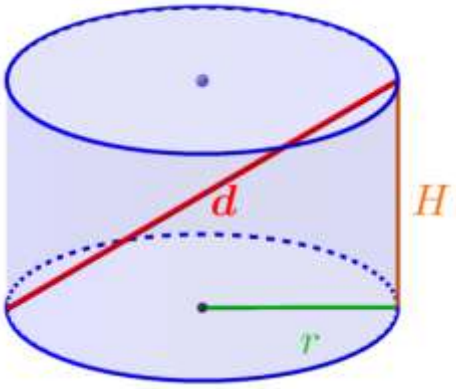


Suggested answers:

r – radius of the cylinder base

l – forming a cylinder

H – height of the cylinder



d – diagonal of the cylinder

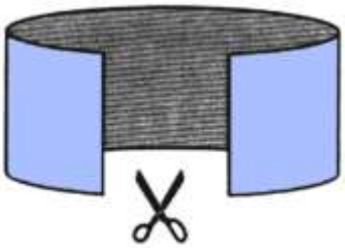
Stage 3 (5 – 10 minutes)

The teacher discusses the properties of the cylinder, gives formulas for the calculation of area and volume. Then the students watch the video:

https://www.youtube.com/watch?v=YA0xN128QGg

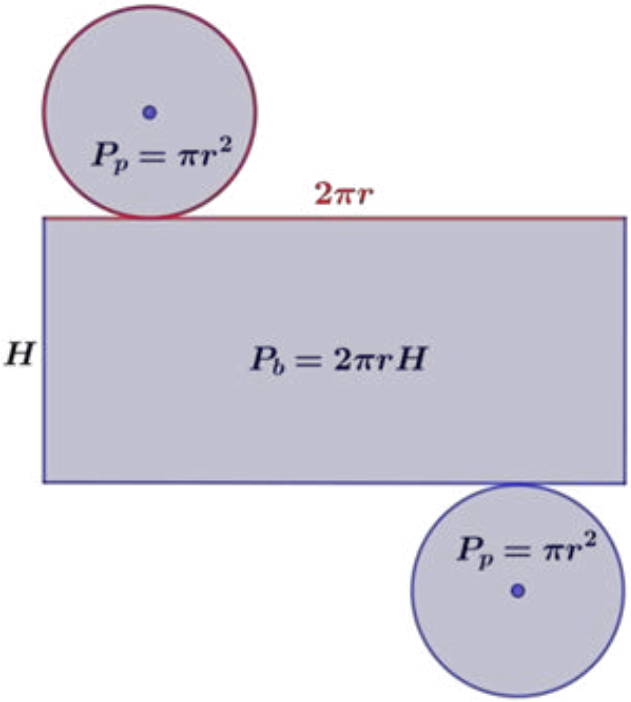
Now let's look at the area of a cylinder.

The lateral surface of the cylinder after cutting (as in the figure) and unfolding on the plane is a rectangle.



Task 3. Draw a cylinder mesh. Complete the gaps in the sentence below the picture.

Suggested answers:



It consists of *two circles* and *a rectangle*.

We note that the length of one of the sides of the rectangle is equal to the height of the cylinder, while the length of the second side equals the circumference of the base of the cylinder.

So to calculate the total area of the cylinder, it is enough to calculate the field of its grid. That's why we have the following patterns:

- base area of a cylinder:

$$P_p = \pi r^2$$

- lateral area of a cylinder:

$$P_b = 2\pi r H$$

- total area of a cylinder:

$$P_c = 2P_p + P_b$$

$$P_c = 2\pi r^2 + 2\pi rH$$

$$P_c = 2\pi r(r + H)$$

The volume of the cylinder is calculated from the formula:

$$V = P_p H$$

$$V = \pi r^2 H$$

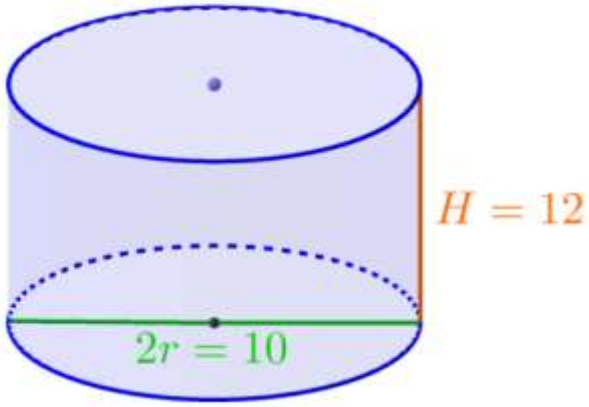
Stage 4 (10 – 20 minutes)

Students jointly solve tasks with content regarding of the cylinder.

Task 4. Calculate the area of the total cylinder with a height of 12 cm and a base diameter of 10 cm.

Suggested answers:

We make an auxiliary drawing and print the data:



$$H = 12$$

$$2r = 10$$

We calculate the radius of the cylinder base:

$$r = 10 : 2 = 5$$

We calculate the total cylinder area – we substitute data for the formula:

$$P_c = 2\pi r^2 + 2\pi rH$$

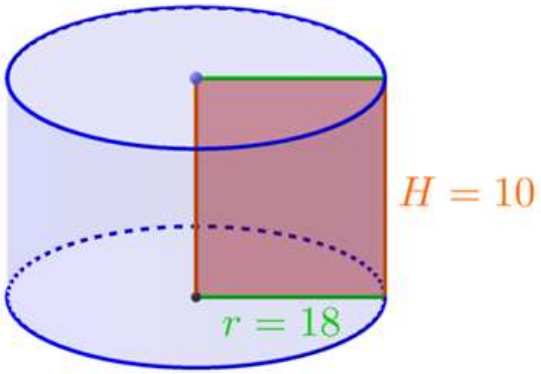
$$P_c = 2\pi \cdot 5^2 + 2\pi \cdot 5 \cdot 12 = 50\pi + 120\pi = 170\pi$$

Answer: The total area of the cylinder is $P_c = 170\pi$ cm^2.

Task 5. Calculate the volume of the cylinder resulting from the rotation of the rectangle measuring 10 cm x 18 cm around the shorter side.

Suggested answers:

We make an auxiliary drawing and print the data:



$$H = 10$$

$$r = 18$$

We calculate the volume of the cylinder – we substitute the data to the formula:

$$V = \pi r^2 H$$

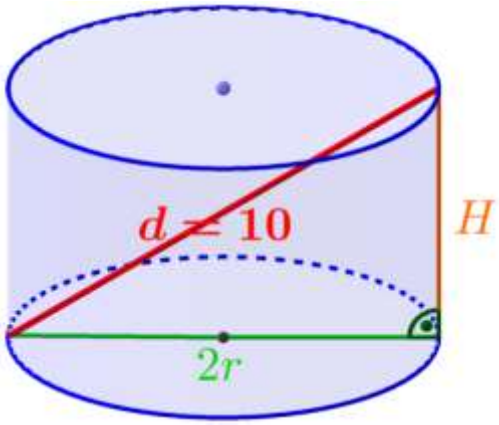
$$V = \pi \cdot 18^2 \cdot 10 = 3240\pi$$

Answer: The volume of the cylinder is $V = 3240\pi$ cm^3.

Task 6. Calculate the radius of the cylinder base, height and volume, know that its base area is 9π cm^2, and the diagonal of the cylinder is 10 cm long.

Suggested answers:

We make an auxiliary drawing and print the data:



$$P_p = 9\pi$$

$$d = 10$$

We calculate the radius of the cylinder base:

$$P_p = \pi r^2$$

$$r = \sqrt{\frac{P_p}{\pi}}$$

$$r = \sqrt{\frac{9\pi}{\pi}} = \sqrt{9} = 3$$

We calculate the height of the cylinder using the Pythagorean theorem:

$$H^2 + (2r)^2 = d^2$$

$$H^2 + (2 \cdot 3)^2 = 10^2$$

$$H^2 + 6^2 = 10^2$$

$$H^2 + 36 = 100$$

$$H^2 = 100 - 36$$

$$H^2 = 64$$

$$H = \sqrt{64}$$

$$H = 8$$

We calculate the volume of the cylinder – we substitute the data to the formula:

$$V = \pi r^2 H$$

$$V = \pi \cdot 3^2 \cdot 8 = 72\pi$$

Answer: The cylinder has dimensions: $r = 3$ cm, $H = 8$ cm. The volume of the cylinder is 72π cm^3.

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Did you learn new things during the lesson?				
2. Did you have enough time to do the activities?				
3. Were the activities interesting for you?				
4. Did you take part in the lesson?				
5. Did the lesson help you improve your vocabulary on the topic?				
6. Did the lesson help you improve your				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Lesson 3 – Exponents and Root Numbers

INTRODUCTION:

A common language is needed in order to communicate mathematical ideas clearly and efficiently. Exponential notation is one example. It was developed to write repeated multiplication more efficiently. For instance, we use exponential notation when we teach cell division in Biology. Growth occurs in living organisms by the division of cells. One type of cell divides two times in an hour so in 12 hours the cell will divide 2 · 2 · 2 · 2 · 2 · 2 · 2 · 2 · 2 · 2 · 2 · 2 times. This can be written more efficiently as 212. Scientific notation is a mathematical method for writing longer multiplication problem in a simplified manner. Scientific notation is a special way of writing numbers so they are easier to work with. There are often numbers that are very large or very small and they can be difficult to work with. By writing these numbers in scientific notation, we can more easily solve problems with numbers that used to be too big or too small. Another kind of indirect example of using exponents is when we talk about extremely tiny or extremely big quantities. For example the term nanometer means 10 – 9 meter. The prefix nano means number 10 – 9, which is an extremely small decimal number (0.000000001) . Or within computer world we often hear about megabytes, gigabytes and terabytes. "Mega" means 106 or one million , "giga" means 109 and "tera" means 1012. The prefixes mega and giga – are of course used in other fields as well; one example is megahertz, which means 106 or one million hertz.

When we talk about root numbers, we can say that we need them in any kind of job that deals with triangles. For example, it is needful for carpenters, engineers, architects, construction workers, those who measure and mark land, artists and designers. We also use them in physics and chemistry lessons with some formulas.

Lesson: Mathematics

Objectives:

1. Students will be able to build a birdhouse with rectangular or square shape.
2. Students will learn how to use Pythagorean theorem to make sure walls and floors are straight.
3. Students will be able to apply root numbers in real life situations.
4. Students will be able to develop their logical thinking and problem solving skills and increase their intelligence.
5. Students will develop their skills in working with the team and a partner.

Time available: 40 minutes (1hour)

Form of students: 9th grade students age level of English

Prior knowledge: The students should already know (that):

1. What perfect square is and what the square root is.
2. The order for evaluating the given expressions.
3. The meaning of the square root symbol as denoting the length of the side of a square with a given area.
4. The formula of Pythagorean theorem.
5. The sets of numbers (integers, rational, irrational, real).
6. Converting numbers from standard notation to scientific notation or scientific notation to the standard notation.
7. Converting units of measure.

Materials and equipment:

- board;
- ruler;
- smart board;
- geoboard /dot paper;
- pencil;
- calculator;
- cyanoacrylate adhesive activator;
- pieces of wood.

Methods:

- learning by doing;
- experiment;
- debate.

Introduction (10 minutes)

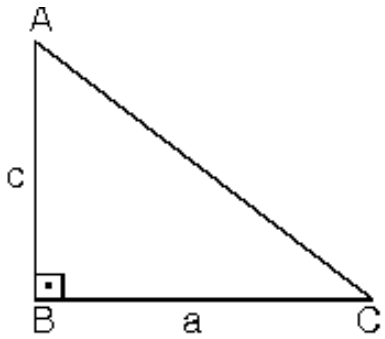
The teacher starts the lesson by asking some questions:

1. What is perfect square?
2. What is square root?
3. What is the formula of Pythagorean theorem and to what kind of triangles you can apply this formula?
4. Tell the order for evaluating a given expression (consisting of multiplication, division, parenthesis, exponents, subtraction, addition, etc.).

Suggested solution:

The answers for the questions are as below:

1. It is the square of a whole number.
2. The square root of a number is the length of the side of a square with an area equal to the number.
3. You can use this formula for all right triangles. The formula is : $a^2 + b^2 = c^2$.



4. First evaluate anything in parentheses. Next look for exponents followed by multiplication and division (reading from left to right) and lastly, addition & subtraction (again reading from left to right).

TASK 1 (10 minutes)

The teacher puts the students in groups of five. He/she aims to practice the questions in the introduction part of the lesson. For this, the teacher asks each group to look at their books:

1. Which of them are perfect squares? Circle.

16	25	256	10	– 9	44	100

2. Find the results of the given expressions:

   a) $(2 \cdot 3 - 1 + 4) : 3 = ?$

   b) $(32 : 50\ 1) - 6 \cdot 2 = ?$

   c) $(6 : 2 \cdot 4 + 2) : 7 = ?$

3. The floor of a square room is covered with square – foot floor tiles. If 81 tiles cover the floor, how long is each side of a room?

Suggested solution:

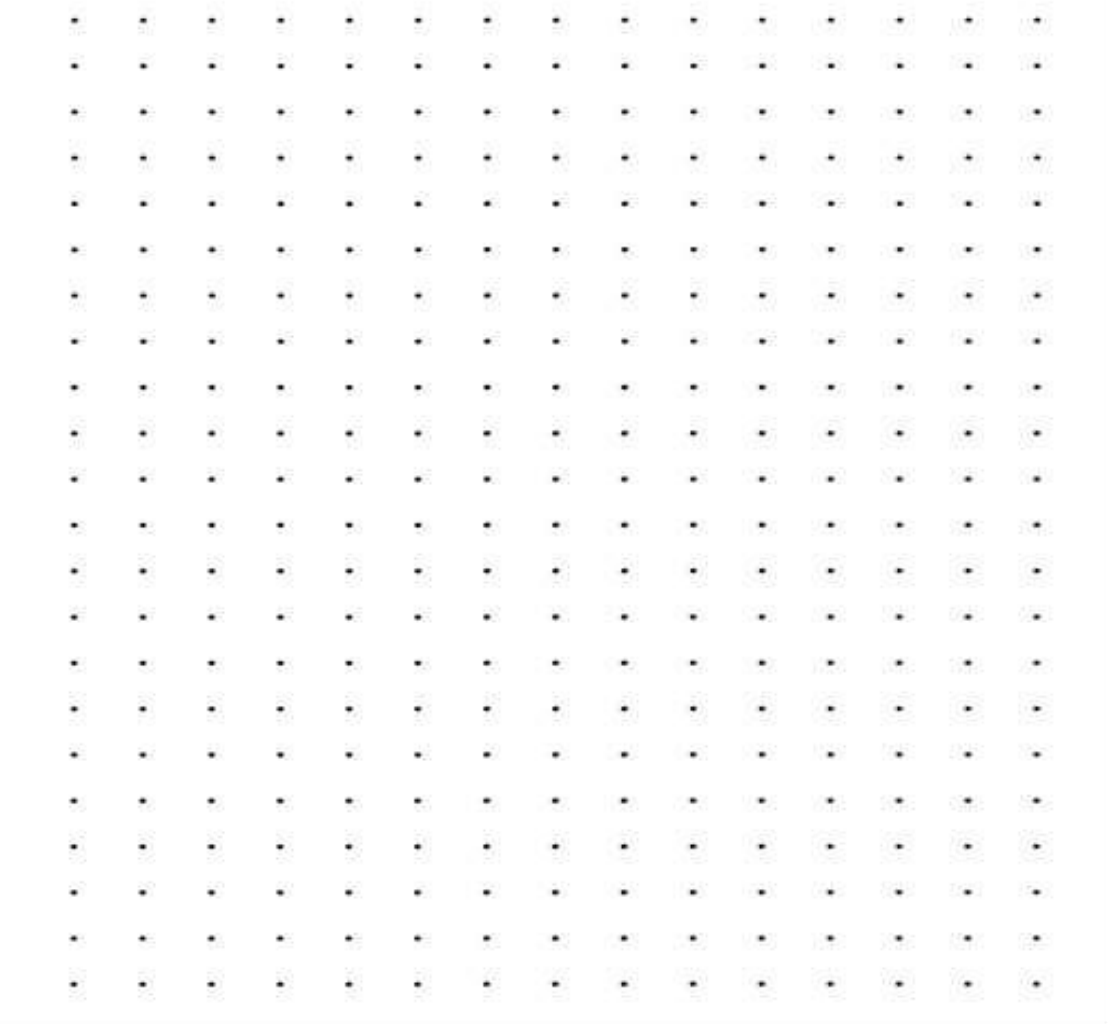
The answers of the questions are as below :

1. 16 – 25 – 256 – 100
2. a) 3; b) – 2; c) 2
3. 9

TASK 2 (20 minutes)

The teacher asks the groups to look at their books. The teacher tells the students to draw a right triangle and asks:

1. Draw a rectangle on your boards and draw one diagonal into it. Then make the picture to be right triangle wiping out the two sides of the rectangle. How can you find the longest side of the triangle?
2. If you want to draw a right triangle without geoboard how can you be sure whether it is right or not?



Suggested Answer:

1. The answers of the groups will vary. By using Pythagorean theorem and taking some square root, they will find the longest side which is called hypotenuse.
2. We measure the length of each side and use Pythagorean theorem. If the sum of the length of right sides is equal to the square of the length of hypotenuse, then it is right triangle.

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Lesson 4 – First and Second Degree Equations

INTRODUCTION:

Math's seems to get more and more complicated when you start doing equations and using symbols like x and y instead of numbers. But equations are really important for calculating the same result many times with different volumes.

Do you enjoy watching the action and movement in your favourite computer game? In order to maket his action look so real, mathematicians and software developers had to come up with complicated equations of how human motion Works. The software for your computer games has more equations in it that you could possibly imagine. Are you fascinated by space exploration? Space scientists and astronauts work with equations all the time. If you want to work in a space program, you need to understand a lot about equations. Or are you interested in studying medicine? Would you like to be a doctor, nurse, dentist or physical trainer? Anyone who wants to be in a kind of job related to medicine should know about equations. Lots of students are interested in aviation. Would you like to be a private pilot and fly your own small plane? You cannot pass the test to get a pilot's licence unless you can work with equations and calculate how to load the phone correctly with people and baggage. Anything that has a computer chip relies on equations like washers and dryers.

If you throw a ball (or shoot an arrow, fire missile or throw a stone), it will go up into the air, slow down as it goes up and then come down again. And a quadratic equation tells you where it will be. The quadratic equation has many applications and has played a fundamental role in human history. The graphs of quadratic equations are called parabolas which are a set of points in one plane that form a u-shaped curve but the application of this curve is not restricted to the world of mathematics. It can also be seen in objects and things around us in our everyday life. The same parabolic shape Works just as well for the bowl of a giant radio telescope, a shaving mirror, headlight, suspension bridge, path of an object in air, fountains and so on.

Lesson: Mathematics

Objectives:

1. Students will learn to build an equation related to the given real life situation.
2. Students will express the real life problems by using the graph of equations.
3. Students will apply the solution methods to the quadratic equations about real life such as:
   - factoring;
   - completing square;
   - graphing;
   - the quadratic formula.

4. Students will model and solve problems.
5. Students will use quadratic equations to solve real life problems.
6. Students will develop their skills in working with the team and a partner.

Time available: 40 minutes (1hour)

Form of students: 10th grade students age level of English

Prior knowledge: The students should already know (that):

1. To draw the graph of the first & second degree equations on the cartesian coordinates system.
2. What the first degree equation in two variable is.
3. What the second degree equation is.
4. The meaning of gravity.
5. Know the solution methods of quadratic equations (completing square, factoring, graphing, the quadratic formula).
6. Know each point on the parabola(curve) is at equal distance from the focus and the directrix.
7. Know the special terms about parabola such as focus, directrix, vertex, axis of symmetry.

Materials and equipment:

- smart board;
- pens;
- pencils;
- notebooks;
- equipment for the art lesson.

Methods:

- learning by doing;
- experiment;
- debate.

Introduction: (10 minutes)

The lesson takes place in the classroom. The teacher starts the lesson by asking some questions:

1. What is parabola?
2. Where can you see parabola in real life situations?

3. If you want to find two consequitive integers the product of which is 72, how can you express the sentence mathematically?
4. What are the steps of solving problems?
5. Why are headlights or satellite dishes parabolic?

Suggested answers:

1. The graph of quadratic equations like a special type of u – shaped curve is called parabola.
2. You can see parabola especially in the real life situations involving reflective properties, such as the inner part of your eyes, satellite dishes, flashlight reflectors, suspension bridge, the path of an object in the air, fountains, etc.).
3. Answers:

The smaller one is x.

The bigger one is y.

If they are consecutive, they

$$x + 1 = y$$

That the product of them is 72 means

$$x \cdot y = 72$$

The sum of a number and its square is 72. To find that number, you can write the mathematical equation as below:

$$x + x^2 = 72$$

4. Answers:
   - define the variables that you want to find in statements;
   - create equations that express the information given in the problem's scenario;
   - solve using algebraic methods;
   - consider if your answer is reasonable;
   - check your answer with the conditions given in the problem.
5. If the light comes from the focus of parabola, it will be reflected as a parallel beam that is parallel to the axis of symmetry. This principle works for the light.

<u>TASK (30 Minutes)</u>

The teacher puts the students in groups of five and asks each group to look at their books.

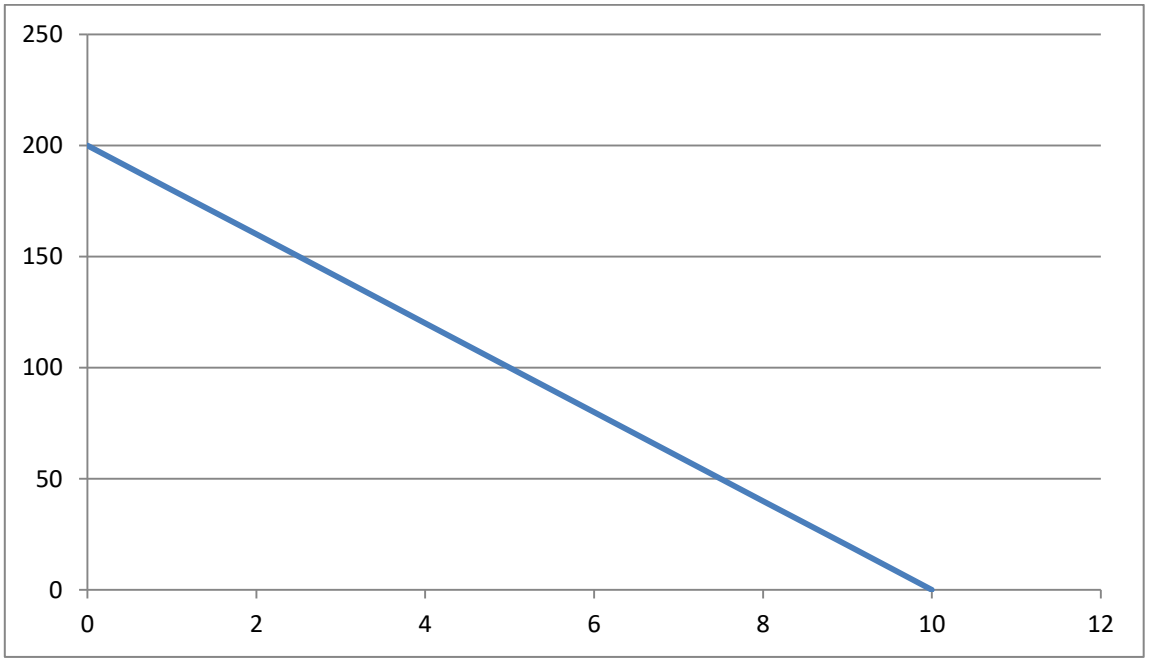
1. The teacher tells them to put the correct words for empty places.

" Equation of a straight line is (1) ..... equation which is called (2) ..... equation. There are special terms for the graph of (3) ....."

Suggested answers:

(1)a first degree; (2)linear; (3)linear equations

2. The teacher asks the groups to look the graph on their books and tells them:



- to write a story according to the given graph;
- to make a table that shows data from the graph;
- to label the axes of the graph with units according to your story;
- to write a linear equation in two variables to model and solve your real life problem.

Suggested answers:

Eda's job is to drain the tank . Eda measures the amount of water that is draining out and finds that 10 liters drain out in 30 minutes. Then she figures that the rate is 20 liters per hour. She makes a table and draw a graph to see when the tank will be empty.

X	0	1	2	3	4	5	6	7	8	9	10
Y	200	180	160	140	120	100	80	60	40	20	0

X : number of hours to empty the tank

Y : amount of water in full tank (liters)

$Y = -20X + 200$ (this is the linear equation of the given real life problem. Find X after writing 0 instead of Y)

From the table and also from the graph, she sees that the tank will be empty after 10 hours.

3. Find the given words in the puzzle:

T	T	O	D	O	T	O	I	G	I	S	N	A	T	T	M	I	P	R	N	L
S	N	N	O	C	A	I	A	R	A	D	T	T	G	R	E	T	A	T	O	C
R	S	A	H	S	E	L	B	A	I	R	A	V	O	R	T	N	I	A	I	N
N	O	I	T	A	C	I	L	P	I	T	L	U	M	S	S	O	R	C	T	O
E	E	I	E	S	M	O	L	H	N	L	O	A	E	U	Y	S	O	B	A	C
E	L	I	M	I	N	A	T	I	O	N	T	T	T	B	S	O	F	S	U	S
E	E	U	C	N	I	O	I	C	I	S	T	A	S	S	T	L	E	E	Q	O
S	U	O	I	A	R	I	C	A	M	F	S	E	Y	T	N	U	Q	R	E	T
N	G	O	A	T	F	R	D	L	O	T	X	O	S	I	E	T	U	I	R	O
A	T	T	R	O	T	H	D	N	M	A	R	L	T	T	T	I	A	N	A	T
I	R	E	B	S	D	B	N	E	E	F	T	I	N	U	S	O	T	O	E	D
A	G	P	E	S	N	O	I	T	U	L	O	S	E	T	I	N	I	F	N	I
U	O	A	G	N	E	C	A	H	H	S	I	T	T	I	S	S	O	I	I	A
U	E	I	L	T	I	N	L	O	E	A	R	I	S	O	N	S	N	D	L	S
R	L	S	A	F	I	E	Y	D	I	C	D	O	I	N	O	O	S	N	O	I
O	U	R	F	D	L	I	T	I	N	T	E	R	S	E	C	T	I	N	G	T
Y	D	E	R	L	I	P	E	X	N	N	O	E	N	H	A	N	H	O	O	C
N	O	O	A	O	I	U	N	I	Q	U	E	S	O	L	U	T	İ	O	N	N
C	O	R	D	E	R	E	D	P	A	I	R	T	C	I	U	C	C	O	S	C
C	A	F	F	T	N	M	C	O	E	S	P	N	N	L	U	I	A	L	R	R
P	N	C	F	A	C	T	N	E	D	I	C	N	I	O	C	E	T	A	O	U

Suggested answers:

UNIQUE SOLUTION

ORDERED PAIR

VAIRABLES

INFINITE SOLUTION

INCONSISTENT SYSTEM

NO SOLUTION

COEFFICIENTS

GRAPHICAL METHOD

CONSTANT

ALGABRAIC METHOD

INTERSECTING

ELIMINATION

PARALLEL

SUBSTITUTION

COINCIDENT

CROSS MULTIPLICATION

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Unit 9 – Music

Lesson 1 – Families of Instruments

Lesson: Music

CLIL Unit: Families of Instruments

Objectives:

1. Students will learn the terms related to families of instruments such as timbre, to bow, to pluck, to blow, string, wind, bras, vibration.
2. Students will learn how instruments are organized inside the orchestra.
3. Students will be able to find a family for each instrument.
4. Students will develop their skills in working on their own and with collaborative activities.

Time available: 60 minutes (1 hour)

Form of students: 1st ESO grade students. 12 to 13 years old.

Prior knowledge: The students should already know (that):

1. Name of the main instruments.
2. What is a classical orchestra.

Materials and equipment:

- smart board;
- simple school instruments;
- students' notebook.

Stage 1 (5 minutes)

Speaking activity:

Try to explain to your partners what you see in this picture.

Suggested answer:

There are around 25 musicians playing together. Most of them are playing different instruments.

Similar instruments are placed all together. The musicians play the instruments in a different way.

Stage 2 (20minutes)

Reading comprehension activity:

Each student is going to have a copy of an explanation and they should read it and answer the questions.

Suggested answer:

1. How is an orchestra arranged?

An orchestra is arranged based on the families of instruments

2. How many musical families are there? What are they?

There are five families of musical instruments: wind (woodwind and brass), percussion, strings, electronic instruments, and human voices.

3. What do you think there are two different wind families?

They blow into the instrument in a different way, some of them produce loud sound and others quiet sounds.

Stage 3 (15 minutes)

Checking their skills. Oral activity:

Find the instrument name which does not belong to the same family as the others.

1.	Trumpet	-	Tuba	-	Piccolo	-	French horn
2.	Timpani	-	Cello	-	Double Bass	-	Viola
3.	Oboe	-	Castanets	-	Bassoon	-	Flute
4.	Snare drum	-	Cymbals	-	Xylophone	-	Cor anglais
5.	Trombone	-	Triangle	-	Tuba	-	French Horn
6.	Saxophone	-	Harp	-	Violin	-	Double bass
7.	Bassoon	-	Clarinet	-	Timpani	-	Oboe

Stage 4 (10 minutes)

Listening activity:

https://www.youtube.com/watch?v=9xb7rGRyC2o

Watching the "Moonrise Kingdom" first 4 minute movie, they are going to be able to recognize some instruments sounds while they are listening to the English explanation.

Suggested answer:

Voices, Wind, Percussion, String.

Stage 5 (10 minutes)

Notebook Activity

They are going to copy in their notebook the main things that we learned today.

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Did the lesson help you improve your vocabulary on the topic?				
6. Did the lesson help you improve your				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

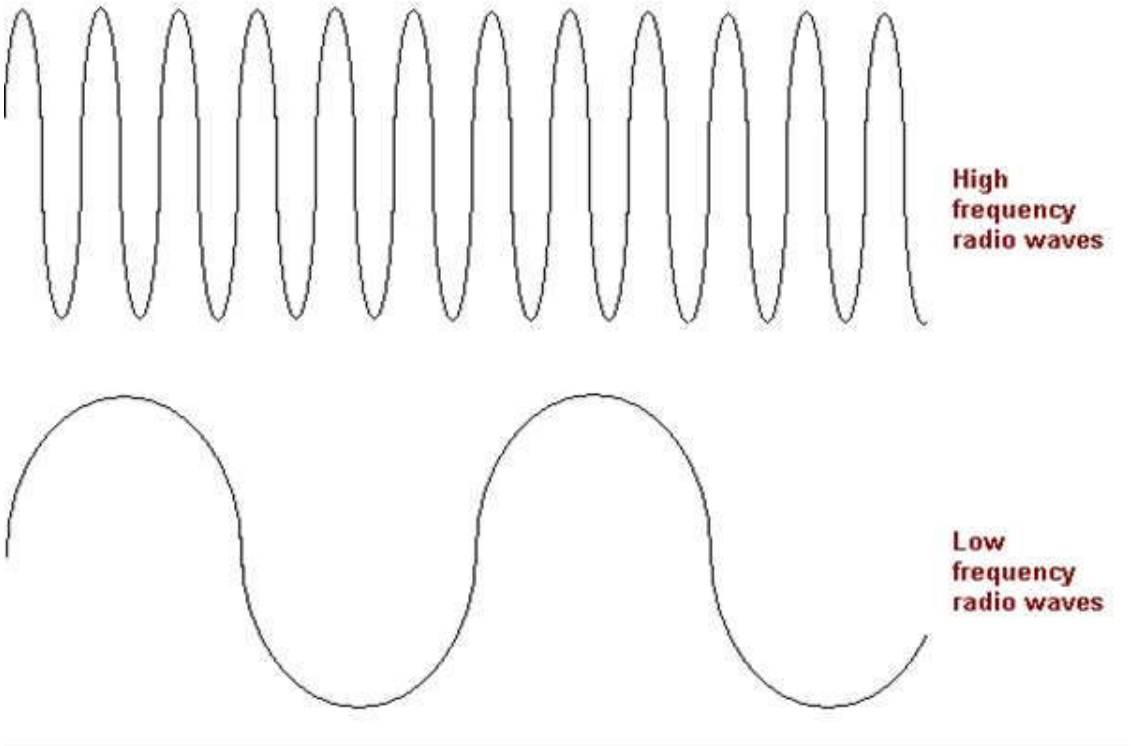
Lesson 2 – Frequency and Sound Waves

Introduction:

FREQUENCY

Have you ever wondered why the sky is blue? Or, more to the point, why anything has a color in the first place? Your father's voice might have been deep, and your mother's voice not so deep. Whether it's colors, or the notes on a piano, these things are all explained by frequency.

Frequency is a property of a wave. We are surrounded by waves every day. Light is an electromagnetic wave, and the sound of the fan in your computer is a sound wave. A **wave** is a vibration that carries energy with it. The **frequency** of a wave is the number of waves that pass by each second, and is measured in Hertz (Hz). For example, a sound wave might have a frequency of 450 Hz.



Usually frequency is measured in the hertz unit, named in honor of the 19th – century German physicist Heinrich Rudolf Hertz. The hertz measurement, abbreviated Hz, is the number of waves that pass by per second. Another unit for frequency is "**cps**". The number of cycles per unit of time is called the frequency. Therefore, frequency is also measured in cycles per second(cps). 1 Hz is equivalent to 1 cycle/second.

The **frequency** of a wave refers to how often the particles of the medium vibrate when a wave passes through the medium. Frequency is a part of our common, everyday language. For example, it is not uncommon to hear a question like "How frequently do you mow the lawn

during the summer months?" Of course the question is an inquiry about how often the lawn is mowed and the answer is usually given in the form of "1 time per week." In mathematical terms, the frequency is the number of complete vibrational cycles of a medium per a given amount of time.

SOUND WAVES

Sound waves need to travel through a medium such as a solid, liquid, or gas. The sound waves move through each of these mediums by vibrating the molecules in the matter. The molecules in solids are packed very tightly. Liquids are not packed as tightly as solids. And gases are very loosely packed. The spacing of the molecules enables sound to travel much faster through a solid than a gas. Sound travels about four times faster and farther in water than it does in air. This is why whales can communicate over huge distances in the oceans. Sound waves travel about thirteen times faster in wood than air. They also travel faster on hotter days as the molecules bump into each other more often than when it is cold.

Subject: Music

Objectives:

1. Students will be able to realise the frequency of each note
2. Students will be able to distinguish between human voice and sound of the instrument.
3. Students will be able to comprehend the meanings of the words like frequency, hertz and sound.
4. Students will be able to comprehend that sound is a wave action which consists of the frequency of matter particles.
5. Students will be able to develop their logical thinking and problem solving skills and increase their intelligence.
6. Students will develop their skills in working with the team and a partner.

Time available: 40 minutes (1 hour)

Form of students: 9th grade students

Assumptions : The students should already know (that):

1. different types of human voices - soprano, tenor, alto and bass;
2. the elements of sound;
3. the formation of sound.

Materials and equipment:

- smart board;
- guitar;
- violin;
- cello;

- viola;
- piano;
- tray;
- salt;
- speakers.

Methods and procedure:

- learning by doing;
- experiment;
- debate.

Introduction: (10 minutes)

The lesson takes place in the classroom. The teacher starts the lesson by asking some questions:

1. What is frequency? How can it be related to our lesson? Look around you and give an answer.
2. What is the difference between music and noise?
3. What type of sounds can human ear hear?
4. Can sound propagate at loose ends? Why or why not?

Suggested answers:

1. Frequency is the number of complete cycles per second in alternating current direction. The standard unit of frequency is the hertz, abbreviated Hz. If a current completes one cycle per second, then the frequency is 1 Hz; 60 cycles per second equals 60 Hz.
   There are some instruments in the classroom. The teacher may ask the students to use them to show the frequency. For example, he/she can take the metallophone, touch it and get the students to feel the frequency of the instrument.
2. The distinction between music and noise is mathematical form. Music is ordered sound. Noise is disordered sound.
   Music and noise are both mixtures of sound waves of different frequencies. The component frequencies of music are discrete (separable) and rational (their ratios form simple fractions) with a discernible dominant frequency. The component frequencies of noise are continuous (every frequency will be present over some range) and random (described by a probability distribution) with no discernible dominant frequency.
3. Human ear can hear the sounds between 20 Hz and 20000 Hz. The sound waves below this gap are called "infra – acoustic" and the ones above this gap are called as ultrasonic sounds. Animals like dolphins and bats make an ultrasonic sound. Dogs can hear

sounds between 50 Hz and 45000 Hz and cats can hear sounds between 45 Hz and 85000 Hz.

4. Sound cannot propagate at loose ends. For example, you cannot hear the sound of an alarm clock in a bell glass that is deflated. Because there is no matter that can carry the sound waves that the clock propagate. Sound propagate from one point to another in straight waves. These waves occur as a result of frequencies.

EXPERIMENT: (10 minutes)

The teacher has five groups of students (4 students in each group). He/she chooses a spokesperson from each group The teacher puts a tray on the speakers. There is some salt on the tray. Then he/she asks:

- What do you think will happen when I turn the volume up?
- What do you think will happen when I turn the volume down?

The groups take some time to think about the questions. Then the spokesperson from each group gives an answer. After that, the teacher shows what happens by turning the volume up and turning it down.

The result would be as the volume goes up, the salt on the tray starts to move dancingly because the frequency goes up, too.

TASK: (20 minutes)

The teacher has the same groups during the next part of the lesson. He/she gives a different instrument to each member of the groups. The instruments are guitar, violin, cello and viola. The teacher touches "A" note on the piano and asks the students to find the note they hear on their musical instruments:

- Try to find and play the note you hear.

It takes some time for the students to find the note. After a while the teacher listens to them and indicates whether they touch the correct note or not. The same activity goes on. The teacher touches "D" note and "G" note.

At the end the students find out that:

Although they have different musical instruments in their hands, they all play the same "A" note that vibrates at 440 hertz/ "D" note that vibrates at 293,7 hertz/ "G" note that vibrates at 392 hertz.

The table below shows the frequencies of each musical note.

Note	Frequency
A	*440*
B	*493,9*
C	*261,6*
D	*293,7*
E	*329,6*
F	*349,2*
G	*392*

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Unit 10 – Physics

Lesson 1 – Vectors

INTRODUCTION:

A vector is a quantity that has both magnitude (numerical size) and direction. This is the opposite of a scalar, which is a quantity that only has magnitude and no direction. We use vectors in almost every activity we do.

The quantity is either a vector or a scalar. They sometimes have problems with understanding the difference between a vector and a scalar. For example speed and velocity are different quantities since speed has a magnitude therefore it is a scalar; however, velocity has both magnitude and direction so it is a vector quantity. In order to solve vector problems we need mathematics and geometry. (e.g. addition and subtraction of vector quantities, multiplication a vector by a scalar).

Lesson: Physics

Objectives:

1. Students will identify the difference between scalar and vector quantities.
2. Students will show vectors on a coordinate axis.
3. Students will learn how to find the components of a vector.
4. Students will derive the method for computing the resultant of two vectors.
5. Students will solve problems that involve vector addition, subtraction.
6. Students will develop their skills in working with the team and a partner.

Time available: 40 minutes (1hour)

Form of students: 10th grade students age level of English

Prior knowledge: The students should already know (that):

1. basic operations in Mathematics;
2. plotting a point on a coordinate axis;
3. appropriate units of measurement;
4. geometrical shapes.

Materials and equipment:

- paper;
- rulers;
- smart board;

- maps.

Methods:

- learning by doing;
- experiment;
- debate.

Stage 1 (15 – 20 minutes)

The teacher goes through some previously acquired theoretical concepts (15 – 20 minutes) by giving examples and asking the following questions:

The newsreader says:

1. When the construction of the bridge between Istanbul-Izmir finishes, the journey will take only 4 hours by car.
2. There has been an increase in obesity around 5 % in the world.
3. Galatasaray beat Real Madrid 3 – 2 at the semi-final of champions league.
4. Drivers must watch out traffic signs in the flow direction from Kocaeli to Ankara between 45 – 80 km on the motorway because of the road construction.
5. It was announced that a gold treasure from Byzantine period was found in 40 km northwest direction of Hagia Sophia Museum in Istanbul.

If the newsreader made a mistake by not reading the words in bold in the last two news, would you understand what happened? Why or why not?

Decide the type of the quantities below:

1. Imagine that one of your friends is running with a speed of 5 m/s. Scalar quantity
2. The bus is heading at a velocity of 50 km/h towards the school. Vectoral quantity
3. The force on the bridge is 80 N acting downwards. Vectoral quantity
4. The temperature of the classroom is 22°C. Scalar quantity
5. Imagine that you are going to canteen from classroom at about 4 m/s in a northerly direction. Vectoral quantity
6. You are using your GPS in your car to help you get to your destination. The GPS tells you that you will reach your destination in 5 minutes. Scalar quantity
7. The weather reporter says that at 1 a.m., the wind will blow from the north at 12 km/h and at 1 p.m. the wind is expected to blow eastward at 36 km/h. Vectoral quantity
8. Imagine that you are in a treasure hunt. Walk 30 paces north, then 25 paces east, then dig a hole and you will find it! Vectoral quantity
9. When you put veggies on a scale, the scale might read 100 grams. Scalar quantity
10. You would guess that – 10 degrees Fahrenheit means that it is cold. Scalar quantity

Task (20 minutes)

1.1. The teacher asks the students to look at the wind speed map on a weather report.

This is the wind – speed map on a weather report.

Do you think such a system is sufficient for detecting general trends in wind direction and speed?

Suggested solution:

The students are going to have a miserable time. They need very good eyesight and patience to understand the map. Such a system is insufficient for detecting general trends in wind direction and speed. To do so, they have to write down all the data for each location and study it.

1.2. Is there a way that we can incorporate both aspects of wind, speed and direction, with a simple system?

Use arrows to indicate the direction of the wind with an arrow while writing the wind speed next to the arrow.

Suggested solution:

There is a way that we can incorporate both aspects of wind, speed and direction with a simple system. If we use arrows the viewers can easily tell which direction the wind is blowing and its speed. By making the students draw arrows, the teacher will see if they can recognize the directions. Also, it will be easier for the students to read the map in this way.

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Lesson 2 – The nature of light

Subject: Physics

Level: B (16 years)

Time: 45 minutes

OBJECTIVES:

1. To describe double nature of light (wave – particles).
2. To understand the meaning of quantum.
3. To describe phenomena, using the right theory about light.
4. To realize that physics' theories change through history.
5. To realize the importance of light in our lives.
6. To practice English language.

KNOWLEDGE TO BE REVISED/PRACTICE:

- wave;
- particle;
- reflection;
- refraction;
- interference;
- diffraction;
- polarization;
- photoelectric effect.

PLACE: The classroom or the physics' lab

EQUIPMENT

- computer;
- internet facilities;
- video projector.

VOCABULARY

1. *Wave* : Always spreaded, not carrying mass
2. *Particle* : Always at a certain position, carrying its mass
3. *Reflection* : When a wave meets another medium and comes back
4. *Refraction* : When a wave meets another medium and passes to it.
5. *Interference* : Two or more waves, travel at the same medium.
6. *Diffraction* : A wave meets a hole or an object of dimensions similar to its length.
7. *Polarization* : A transverse wave has a certain direction of oscillation

8. *Photoelectric effect* : When light hits a metal plate, the plate emits electrons.

ANTICIPATED PROBLEMS:

1. Maybe students don't remember or even haven't been taught some phenomena, so the teacher should explain or give them as homework.

PROCEDURE

1. **(Listening)** Watch the video below:

https://www.youtube.com/watch?v=OLCqaWaV6jA

2. **(Reading)** Fill in the gaps using the following words: atoms, double, energy, Maxwell's, particles, photons, Planck's, reflection, refraction, source, wave.

Light has a _____ nature: It behaves as a _____ when it travels, like in interference, diffraction and polarization, but it behaves as _____ when it is absorbed or emitted by matter, like in photoelectric phenomenon.

According to _____ theory, light is a sum of transverse electromagnetic waves, that start from the light _____ and travel to all directions. As a wave, its velocity (c), length (λ) and frequency (f) are related by the equation $c = \lambda \cdot f$.

According to _____ theory, light (and any electromagnetic radiation), is emitted and absorbed by _____ of matter in a non constant way. That means that every atom emits or absorbs elementary amounts of _____ that are called quanta or _____ . Every photon has energy (E) that is related with its frequency (f) by the equation $E = h \cdot f$, where h is constant. _____ and _____ can be explained by both theories.

3. **(Speaking)** Try to describe the reflection of light, using the particle theory.

Try to explain that the dilemma "wave or particle" does not stand for light.

Try to describe the "history" of light, when we see an object.

What do you think is the most important usage of light in our life?

4. **(Writing)** Find songs talking about light or anything similar. Explain the role of light in each one.

Write an essay about how light is used in arts.

Write an essay about the meaning of light in religions.

HOMEWORK/TEST

1. A radio antenna radiates 104 W of power at 96,3 MHz. How many photons per second are emitted? (h=6,63.10-34J.s)
2. Human eyes can recognize light with wave length between 400 and 700nm. Which is the minimum and the maximum frequency that we can see? (c=3.108m/s)

Ioannis Arapkoules – Teacher of Physics

at the 1st Lyceum of Perama – Greece

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				

Lesson 3 – Physical characteristics of sound

Level: Senior High School (15 – 17 years)

Time: 45 min

Subject: Music/Physics

OBJECTIVES:

1. To realize sound is a wave (movement of air).
2. To see the differences between the characteristics of sound
3. To understand how a musical instrument produces sound (vibration of a material).
4. To correspond notes and characteristics of sound.
5. To practise physics & music terminology in English.
6. To promote co-operation through the team work.

KNOWLEDGE TO BE REVISED / PRACTISED:

- material;
- air;
- motion;
- wave;
- pressure;
- density;
- duration;
- note length;
- frequency;
- pitch, volume/loudness;
- tone;
- note.

TEACHING SOURCES AND AIDS:

- "Physics, 3rd class of Minor High School", N. Antoniou etc., Diophantos Press;
- various internet sources;
- activities prepared by the teacher (APPENDIX);
- pendulum;
- long and soft spring;
- acoustics frequency generator;
- large loudspeaker (in cabin, grid destructed) e.g. 100W, 12";
- cables;
- some musical instruments e.g. guitar, piano, drums, flute.

ANTICIPATED PROBLEMS:

1. Students haven't been taught oscillations and waves extensively.
2. Students usually confuse frequency and loudness of a sound.
3. The explanation of the db scale and the harmonics demands some more maths.

PROCEDURE:

Stage 1 LESSON ROUTINES (5 minutes)

1. Greetings.
2. Checking the register.
3. Writing the subject on the board.

Stage 2 PRE – ACTIVITIES (10 minutes)

Activity 1: Intrige (2 minutes)

Teacher shows a pendulum and asks students what it is and how it works.

Students present their ideas and teacher writes them on the board

Activity 2: Vibration (6 minutes)

Teacher starts the pendulum and explains that:

- vibration or mechanical oscillation is a repetitive movement forwards – backwards;
- energy is needed to begin and preserve an oscillation and determines its amplitude;
- frequency shows how fast the oscillation occurs and is counted in Hertz ($1Hz = 1osc/s, 1KHz = 1000osc/s$);

by changing the length and the starting point of the pendulum.

Activity 3: Wave (2 minutes)

Teacher lies the spring on a table. A student holds the one end of the spring and teacher moves the other end forward-backwards with standard frequency. He/she explains that:

- the vibration of his/her hand is spreaded to the spring;
- every element of the spring is vibrating with the same frequency;
- a wave is a transfer of energy that travels through a medium (space or mass).

Stage 3 WHILE – ACTIVITIES (15 minutes)

Activity 4: Vibration & sound (3 minutes)

Teacher connects the acoustics frequency generator to the speaker (attention, not to cause damage to the speaker by high currency) and explains that the coil of the speaker transforms electric currency to mechanical movement (by one positive and one negative voltage).

He/she sets the generator in alternative mode (tone) and starts changing the frequency slowly, beginning from 1Hz.

Students present their ideas about the movement of the speaker's membrane, according to the frequency.

When the frequency reaches about 20Hz, students hear a deep sound and try to describe it (e.g. like an earthquake or the step of an elephant etc.). Teacher explains that sound is everything that can be heard (maybe about infrasound and ultrasound too)

Teacher continues increasing the frequency and students are to describe the sound as "tone" or "note".

When frequency reaches about 10 KHz students are to describe the sound as "scratchy" or "creepy".

Exercise 5: Frequency (2 minutes)

Teacher sets a well – heard frequency e.g. 500 Hz and changes the currency of the generator. Then holding a standard currency, changes the frequency and asks the students to describe the differences.

Students try to describe the difference of the sound.

Teacher explains that the pitch of a note is the frequency of the sound. (Appendix)

Exercise 6: Duration (2 minutes)

Teacher plays one short and one long note on the piano.

Students try to describe the difference of the sound.

Teacher explains that the length of a note is the duration of the sound. Music notes are multiples and submultiples of a certain duration that we call "beat".

Exercise 7: Thickness (2 minutes)

Teacher holds the guitar and plays different strings.

Students try to describe the difference of the sound.

Teacher explains that different materials (thickness) of the same length, produce vibrations and sounds of different frequencies.

Exercise 8: Tense (2 minutes)

Teacher plays a string on the guitar and changes the tension.

Students try to describe the difference of the sound.

Teacher explains that different materials (tension) of the same length, produce vibrations and sounds of different frequencies.

Exercise 9: Length (2 minutes)

Teacher plays a string on the guitar and changes the length by pressing different frets.

Students try to describe the difference of the sound.

Teacher explains that different lengths of the same material, produce vibrations and sounds of different frequencies.

Exercise 10: Tone quality (2 minutes)

A student plays a note on the guitar and the teacher asks another student to produce a sound of the same frequency on the generator.

Students try to describe the difference of the sound.

Teacher explains that sound are usually of various frequencies. When all these frequencies (harmonics) are multiplied of one (basic) then we call it a "note", otherwise we usually call it "noise". Each instrument on every note (basic frequency) produces different harmonics with different levels and that makes up the "tone quality" of the instrument.

Stage 4 POST – ACTIVITIES (10 minutes)

Exercise 11: Describe notes (2 minutes)

Teacher plays one note on the guitar and another one on the piano and asks the students to describe the notes by using the terms "frequency", "length", "volume" and "tone quality".

Exercise 12: Produce notes (8 minutes)

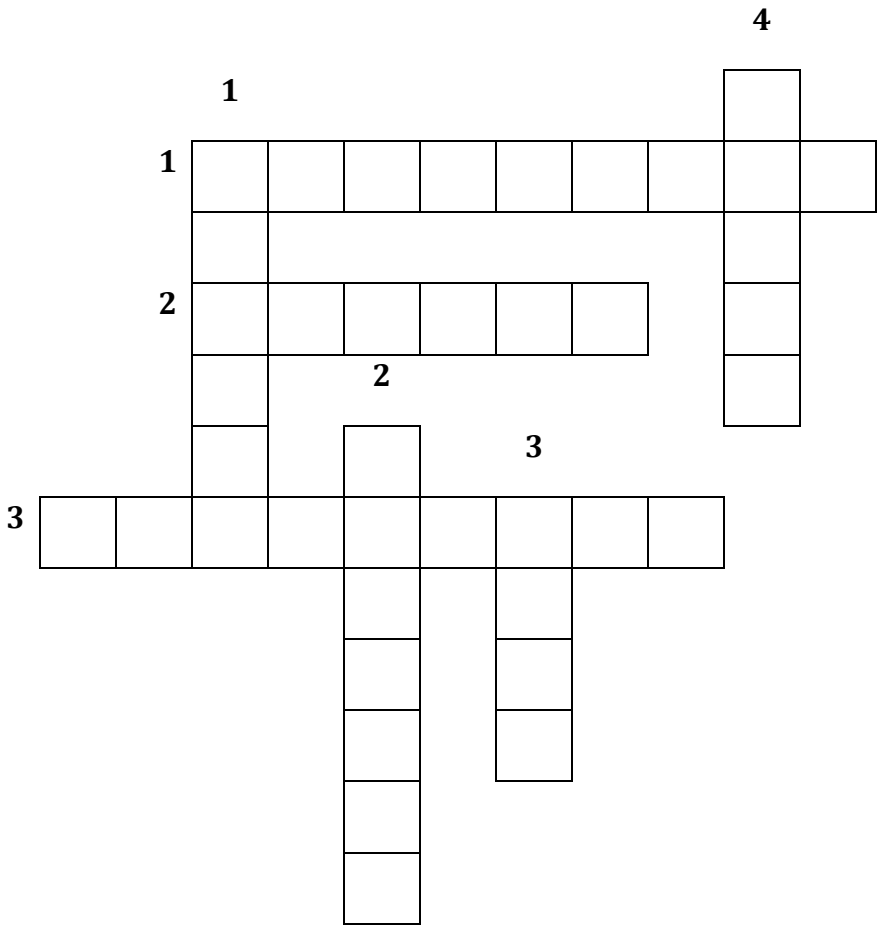
Teacher asks the students (working in teams) to produce:

- 2 notes of different frequency but of the same other characteristics;
- 2 notes of different length but of the same other characteristics;
- 2 notes of different volume but of the same other characteristics;
- 2 notes of different tone quality but of the same other characteristics.

Stage 5 RESERVED ACTIVITY / SETTING HOMEWORK/TEST (5 minutes)

Teacher distributes the copies of a crossword. He explains the task. If there is some time left, students are completing the crossword during the lesson. Otherwise, they are to complete the crossword at home.

APPENDIX 1 (CROSSWORD)



Across:

1. A forwards-backwards movement

2. The duration of a note

3. It shows how high is a note

Down:

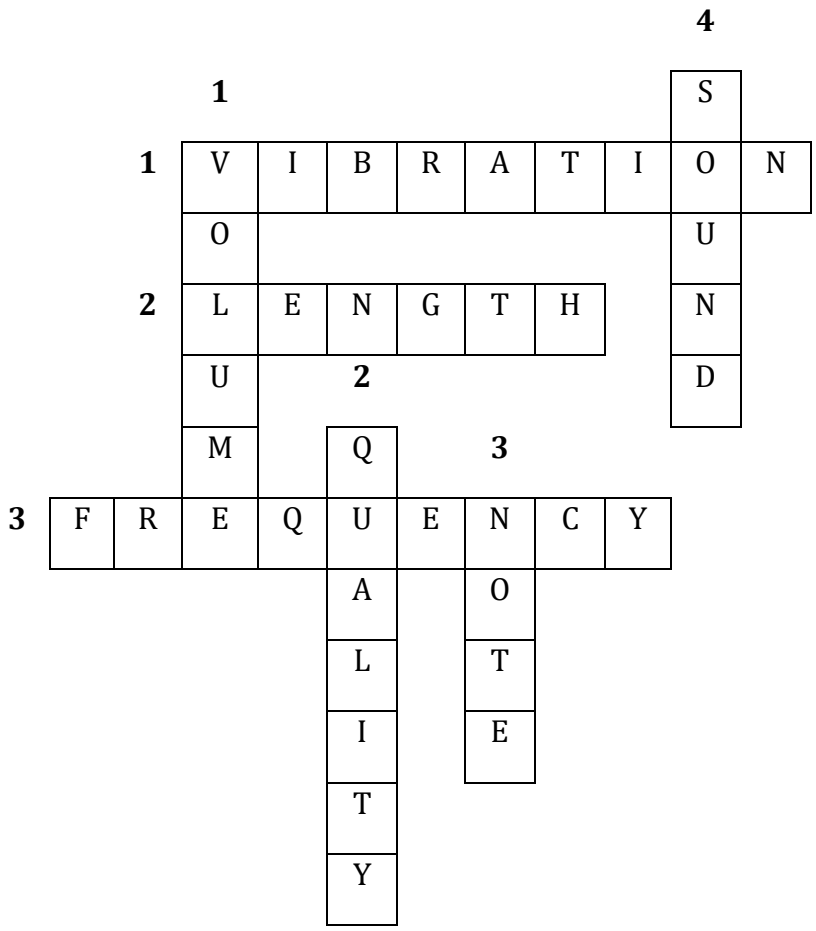
1. It shows how loud is a note

2. Each instrument has a special tone .....

3. A sound of a basic and some multiple frequencies

4. Everything that can be heard.

SOLUTION:



APPENDIX 2 (READING EXCERSISE)

Read the following text and try to answer the questions that follow, using terms of the text.

3 Main Physical Characteristics of Sound Waves – Frequency, Amplitude, Complexity

(Article shared by Raghavendra Prasad, http://www.shareyouressays.com)

The adequate stimulus for audition consists of sound waves in the surrounding medium. The medium may be air, ground or water. Sound waves cannot travel without a medium. If you strike two pieces of metal together in a vacuum there will be no sound.

A sound wave is created when air particles (molecules) move back and forth. Simple sound waves are called sine waves.

Sound waves vary in three respects: frequency, amplitude and complexity. Our psychological 'experience of pitch, loudness and timbre depend upon these physical characteristics of the sound waves.

1. Frequency and Pitch:

With reference to audition, the term frequency refers to the rate of vibrations. It refers to the number of times per second that the whole wave is repeated. If a sound wave is repeated 400 times per second, its frequency is said to be 400 cycles.

Sound wave frequencies are generally measured in cycles per second. One cycle per second, also referred to as one Hertz (Hz), represents the sequence of compression to decompression to compression.

Frequencies produce the sound sensation known as pitch. The higher the frequency, the higher is the pitch, the lower the frequency, the lower is the pitch. However, the increase in frequency by a certain amount does not increase the experience of pitch by the same amount.

2. Amplitude and Loudness:

Amplitude refers to the strength or intensity of the wave. It refers to the amount of compression and expansion air molecules undergo. The height of the peaks of the sine wave represents amplitude.

Amplitude gives us the psychological experience of loudness. When the source of a sound wave undergoes intense vibration, the amplitude of the wave is high and we experience a loud sound. When the sound vibrates less intensely, the wave's amplitude is lower and the sound is fainter. The loudness or amplitude of sound is measured in terms of decibels.

3. Complexity and Timber:

Timber refers to the purity or quality of a tone. Most of the sounds that we hear are complex sounds. The complexity of a sound is experienced psychologically as timber or tone quality. Because of wave complexity or timber, we are able to identify the same musical note when it is played on different instruments.

Complex waves are of different types. They can be periodic or a periodic waves. Sound wave produced by musical instruments is generally periodic waves. A-periodic waves are referred to as noise in common language. These waves differ in frequency and amplitude in a random order.

Questions:

1. Why do you think that we can't hear the huge explosions (like millions of nuclear bombs) that happen on the sun?
2. When a car engine works faster (high rpm), we hear a sound of a higher pitch. Can you explain?
3. If we want to make our drums sound louder, we hit them stronger. Why?
4. Why every instrument sounds differently?

APPENDIX 3 (NOTES AND FREQUENCIES)

Note	Hz	Note	Hz	Note	Hz	Note	Hz	Note	Hz	Note	Hz	Note	Hz
C1	32.7	C2	65.4	C3	130.8	C4	261.6	C5	523.3	C6	1046.5	C7	2093.0
C#1	34.6	C#2	69.3	C#3	138.6	C#4	277.2	C#5	554.4	C#6	1108.7	C#7	2217.5
D1	36.7	D2	73.4	D3	146.8	D4	293.7	D5	587.3	D6	1174.7	D7	2349.3
D#1	38.9	D#2	77.8	D#3	155.6	D#4	311.1	D#5	622.3	D#6	1244.5	D#7	2489.0
E1	41.2	E2	82.4	E3	164.8	E4	329.6	E5	659.3	E6	1318.5	E7	2637.0
F1	43.7	F2	87.3	F3	174.6	F4	349.2	F5	698.5	F6	1396.9	F7	2793.8
F#1	46.2	F#2	92.5	F#3	185.0	F#4	370.0	F#5	740.0	F#6	1480.0	F#7	2960.0
G1	49.0	G2	98.0	G3	196.0	G4	392.0	G5	784.0	G6	1568.0	G7	3136.0
G#1	51.9	G#2	103.8	G#3	207.7	G#4	415.3	G#5	830.6	G#6	1661.2	G#7	3322.4
A1	55.0	A2	110.0	A3	220.0	A4	440.0	A5	880.0	A6	1760.0	A7	3520.0
A#1	58.3	A#2	116.5	A#3	233.1	A#4	466.2	A#5	932.3	A#6	1864.7	A#7	3729.3
B1	61.7	B2	123.5	B3	246.9	B4	493.9	B5	987.8	B6	1975.5	B7	3951.1

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at the 1st Lyceum of Perama – Greece

Evaluation of the lesson

question	poor	satisfactory	good	excellent
1. Do you think the aim of the lesson was achieved?				
2. Do you think the time was enough for the lesson?				
3. Were the activities motivating for the students?				
4. Was the lesson interactive?				
5. Do you think the lesson helped the students improve their specific vocabulary on the lesson topic?				
6. Do you think the lesson helped the students improve their				
a) speaking skills?				
b) writing skills?				
c) listening skills?				
d) reading skills?				