

Cellular Respiration Worksheet

1. What are the 3 phases of the cellular respiration process?

Glycolysis, Krebs Cycle, Electron Transport

2. Where in the cell does the glycolysis part of cellular respiration occur?

in the cytoplasm

3. Where in the cell does the Krebs (Citric Acid) cycle part of cellular respiration occur?

in the mitochondria

4. Where in the cell does the electron transport part of cellular respiration occur?

in the mitochondria

5. How many ATP (net) are made in the glycolysis part of cellular respiration?

2 (net)

6. How many ATP are made in the Krebs cycle part of cellular respiration?

2

7. How many ATP are made in the electron transport part of cellular respiration?

32 – 34

8. In which phase of cellular respiration is carbon dioxide made?

Krebs Cycle

9. In which phase of cellular respiration is water made?

Electron Transport

10. In which phase of cellular respiration is oxygen a substrate?

Electron Transport

11. In which phase of cellular respiration is glucose a substrate?

Glycolysis

12. On average, how many ATP can be made from each NADH during the electron transport process?

3

13. On average, how many ATP can be made from each FADH₂ during the electron transport process?

2

14. What would happen to the cellular respiration process if the enzyme for one step of the process were missing or defective?

The entire process beyond that point could not happen.

15. What happens to the high-energy electrons (and hydrogen) held by NADH if there is no O₂ present? If no oxygen is present, the pyruvic acid must take the electrons (and their hydrogens) back.

16. Explain why this happens.

This happens because there are only a small number of NAD^+ molecules in the cell. They must be reused to keep glycolysis going with additional glucose molecules. This means they need to “unload” the electrons from NADH by giving them to some other molecule. Since the pyruvic acid cannot continue on to the Krebs cycle when there is no oxygen present, it receives the electrons. This allows the glycolysis portion of cellular respiration to continue even when O_2 is not present. This process of making ATP in the absence of O_2 is called fermentation

17. What is the overall reaction for fermentation in yeast?

Glucose \rightarrow 2 Ethyl alcohol + 2 CO_2 + 2 ATP + Heat

18. What is the overall reaction for lactic acid fermentation?

Glucose \rightarrow 2 Lactic Acid + 2 ATP + Heat

19. Only a small part of the energy released from the glucose molecule during glycolysis is stored in ATP. How is the rest of the energy released? (HINT: It is a product in the overall reaction for cellular respiration.)

It is released as heat.

ANSWERS FOR THE BONUS WILL BE POSTED AFTER THE TEST.

BONUS – Answer the questions below on a separate sheet of paper and **turn them in before the test.** They are worth a possible of 5 bonus points on the test.

20. When your cells use fat for energy, the fatty acids are broken up into molecules of acetyl CoA.

Predict how many ATP can be made from **one molecule** of acetyl CoA if oxygen **is** present. Show your work.

21. Suppose that each fatty acid in a certain fat can make 9 molecules of acetyl CoA. Predict how many ATP can be made from the fatty acids in this fat. (Remember there are 3 fatty acids in the fat molecule.)

CLIL MODULE PLANNER

CLIL SUBJECT : SCIENCE
CLIL LANGUAGE : ENGLISH
MODULE TITLE : CELLULAR RESPIRATION
TEACHERS :
CLASS : 5 LS — 5 LC
NUMBER OF LESSONS : 5 of 60 minutes each
PRIOR KNOWLEDGE
<ul style="list-style-type: none">➤ Looking up information on Internet sites in English➤ Chemistry-basic knowledge: the principles of thermodynamics, the reactions of oxidation- reduction, organic compounds➤ Cytology: mitochondria functions and structure
CONTENT OBJECTIVES
<p><i>by the end of the module the students will be able to...</i></p> <ul style="list-style-type: none">➤ recognize and relate about:➤ the importance of cellular respiration in the ecosystem➤ how the cellular respiration releases the energy present in food ➤ build a food chain and show the absorbed energy flow
LANGUAGE OBJECTIVES
<p><i>by the end of the module the students will be able to...</i></p> <ul style="list-style-type: none">➤ look up information, analyse and summarize it, even using dictionary➤ understand and illustrate concepts, relating them with specific lexis➤ interact both with schoolmates and teacher
RESOURCES & MATERIALS

- slides
- videos
- websites
- texts accompanied by illustrations
- files MP3
- worksheets
- smart board
- computer
- texts accompanied by illustrations

SKILLS

- Ability to analyse, report and give reasons of phenomena and concepts
- Digital competence

LANGUAGE SKILLS

- Reading comprehension without the help of dictionary
- To describe a process, either orally or in the written form, using specific lexis and mastering the syntax

ACTIVITIES

TEACHER'S	STUDENT'S	LANGUAGE
<ul style="list-style-type: none"> ➤ Introducing the topic by multimedia, skimming and scanning the documents ➤ worksheets on lexis and contents 	<ul style="list-style-type: none"> ➤ Watching videos, ➤ taking notes ➤ team work ➤ glossary 	<ul style="list-style-type: none"> ➤ Matching words and definitions ➤ listening and labelling pictures ➤ listening and filling-in the gaps

FINAL PROJECT

- *PPT group presentations*

ASSESSMENT CRITERIA

SUMMATIVE	FORMATIVE
<ul style="list-style-type: none"> ➤ task performance ➤ content mastery ➤ communicative competence 	<ul style="list-style-type: none"> ➤ participation ➤ effort ➤ collaborative engagement
ASSESSMENT TASKS	
<ul style="list-style-type: none"> ➤ objective tests: multiple choice, true/false ➤ oral presentations ➤ open questions 	
ATTACHED DOCUMENTS	
<ol style="list-style-type: none"> 1. Video: https://www.youtube.com/watch?v=-Gb2EzF_XqA 2. Worksheet 1 3. Worksheet 2 4. Worksheet 3 5. Worksheet 4 6. Rurbic oral presentations 7. Text 8. Pre test 9. Post test 	

Post-Test Respiration

The correct answer for each question is indicated by a ✓.

1

If ATP synthase is enzymatically neutralized within a cell, which of the following consequences would be the most logical outcome?

- A) Negative feedback will be decreased, causing faster ATP production.
- B) The electron transport chain will slow down.
- C) The cell will have no mechanism to make ATP and will die.
- ✓ D) Phosphylation of ADP will decrease.
- E) All of the above will occur.

2

For one molecule of glucose, what is the maximum number of ATP molecules created directly from the Krebs cycle?

- A) 1

- ✓
- B) 2
 - C) 3
 - D) 4
 - E) 5

3

What is the name of the mechanism by which pyruvate dehydrogenase is inhibited by the end-product of the biochemical pathway?

- A) Anabolism
- B) Catabolism
- C) Regulation
- ✓ D) Negative inhibition
- E) Anti-phosphorylation

4

During yeast fermentation, CO₂ is produced, but animal cells do not produce CO₂. What is the difference in their fermentation strategies?

- ✓
- A) Yeast fermentation creates ethanol.
 - B) Animal cells create ATP and ethanol.
 - C) Animal cells do not undergo fermentation.
 - D) Yeast cells ferment pyruvate to lactic acid.
 - E) There is no difference in their fermentation pathways.

5

Which of the following argues most strongly for glycolysis as one of the most primitive biochemical pathway?

- A) It does not require oxygen in order to function.
- B) It occurs in the cytoplasm of cells.
- C) It is exergonic, and therefore obeys the laws of thermodynamics which are fundamental to chemistry and physics.
- ✓ D) This biochemical pathway has been retained by all living organisms.
- E) There is no evidence that glycolysis is primitive

6

Cellular respiration is

- A) the utilization of oxygen in a cell.
- ✓ B) the oxidation of organic compounds to extract energy from chemical bonds.
- C) production of ATP in a cell.
- D) the conversion of the energy of sunlight to chemical energy.
- E) reduction of NADH to drive chemical reactions in a cell.

7

Because it has 6 carbons, glucose can power 6 cycles ("turns") of the Krebs cycle

- A) True
- ✓ B) False

8

Which of the following statements is *false*?

- A) Some ATP is consumed in glycolysis.
- ✓ B) The end product of glycolysis is lactic acid or ethanol.

- C) Some ATP is created through substrate-level phosphorylation.
- D) Overall, glycolysis releases energy and is thus termed *exergonic*.
- E) All of the above statements are true.

9

Where in a eukaryotic cell does pyruvate oxidation occur?

- A) In the mitochondrion.
- B) In the electron transport chain.
- C) In the cytoplasm, just like in prokaryotes.
- D) Anywhere in the cell, provided pyruvate dehydrogenase is present.
- E) In ribosomes.

10

The Krebs cycle is responsible for making most of the cell's ATP.

- A) True
- B) False

11

Which of the following is most directly responsible for creation of ATP at the mitochondrial inner membrane?

- A) NADH
- B) A proton gradient
- C) FADH²
- D) Movement of electrons along the membrane itself
- E) The activity of NADH dehydrogenase

12

Which of these is one of the correct reasons that less than the theoretical amount of ATP (36-38) is actually created during aerobic respiration?

- A) Because of the efficiency of chemiosmosis, the result is actually much higher.
- B) FADH₂ actually consumes some ATP.
- C) The cell membrane is somewhat leaky to electrons.
- D) The proton gradient can facilitate other tasks besides ATP synthesis.
- E) You have to add in ATP produced during glycolysis, which has nothing to do with oxidation.

13

True or False: The purpose of fermentation is to make ethanol.

- A) True
- B) False

14

What process must occur to allow amino acids to be catabolized for energy?

- A) Deamination
- B) Depurination
- C) Dephosphorylation
- D) Dehydration
- E) Deoxygenation

15

Primitive prokaryotes probably used H₂S instead of water as a source of electrons. What

would have been released into the environment as photosynthesis occurred?

- A) Gaseous hydrogen
- B) Liquid hydrogen
- C) Water
- D) HS
- E) Sulfur

Pre-Test Respiration

The correct answer for each question is indicated by a ✓.

1

Why does NAD^+ serve as important electron carrier?

- A) It is readily reduced and oxidized.
- B) It is insoluble and is stationary within the cell.
- C) It can accept electrons in a variety of positions along its length.
- D) It "protects" electrons from winding up in fatty acid precursors where the energy would be wasted.
- E) All of the above are correct.

2

What products result from the complete oxidation of glucose?

- A) CO_2
- B) ATP
- C) NADH
- D) FADH_2
- E) All of these result from glucose oxidation.

3

Why must NAD^+ be present during glycolysis?

- A) It creates pyruvate directly from glucose.
- B) A glycolysis intermediate must be oxidized in order to receive a phosphate so that substrate-level phosphorylation may occur.
- C) It powers the electron transport chain.
- D) It is a coenzyme which allows the 6 carbons of glucose to separate from each other, leading to two three-carbon products.
- E) This is a trick question: NAD^+ is only involved in the Krebs cycle.

4

What is/are the product(s) of pyruvate oxidation?

- A) O_2
- B) Acetyl-CoA
- C) NAD^+
- D) ATP
- E) All of the above are created during pyruvate oxidation

5

How many CO_2 molecules are released specifically from the Krebs cycle for each glucose molecule consumed?

- A) 1
 B) 2
 C) 3
 D) 4
 E) 6

CLIL MODULE PLANNER

CLIL SUBJECT : SCIENCE
CLIL LANGUAGE : ENGLISH
MODULE TITLE : DIGESTIVE SYSTEM
TEACHERS :
CLASS : 4 LS — 4 LC
NUMBER OF LESSONS : 5 of 60 minutes each
PRIOR KNOWLEDGE
<ul style="list-style-type: none">➤ Looking up information on Internet sites in English➤ Chemistry-basic knowledge: lipids, organic compounds, carbohydrates, proteins
CONTENT OBJECTIVES (<i>Obiettivi disciplinari</i>)
<i>by the end of the module the students will be able to...</i> <ul style="list-style-type: none">➤ recognize and relate about:➤ the main organs of the digestive system➤ the different steps of the digestive process➤ the importance of enzymes in digestion

LANGUAGE OBJECTIVES

by the end of the module the students will be able to...

look up information, analyse and summarize it, even using dictionary
understand and illustrate concepts, relating them with specific lexis
interact both with schoolmates and teacher

RESOURCES & MATERIALS

- slides
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SKILLS

- Ability to analyse, report and give reasons of phenomena and concepts
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LANGUAGE SKILLS

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ACTIVITIES

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<ul style="list-style-type: none"> ➤ Introducing the topic by multimedia, skimming and scanning the documents ➤ worksheets on lexis and contents 	<ul style="list-style-type: none"> ➤ Watching videos, taking notes ➤ team work ➤ glossary 	<ul style="list-style-type: none"> ➤ Matching words and definitions ➤ listening and labelling pictures ➤ listening and filling-in the gaps
FINAL PROJECT		
<ul style="list-style-type: none"> ➤ <i>PPT group presentations</i> 		
ASSESSMENT CRITERIA		
SUMMATIVE		FORMATIVE
<ul style="list-style-type: none"> ➤ task performance ➤ content mastery ➤ communicative competence 	<ul style="list-style-type: none"> ➤ participation ➤ effort ➤ collaborative engagement 	
ASSESSMENT TASKS		
<ul style="list-style-type: none"> ➤ objective tests: multiple choice, true/false ➤ oral presentations ➤ open questions 		
ATTACHED DOCUMENTS <i>(Allegati)</i>		

1. Video: <https://www.youtube.com/watch?v=-Zyk0H1HmjA>
2. [Worksheet 1](#)
3. [Worksheet 2](#)
4. [Worksheet 3](#)
5. [Test](#)
6. [Text](#)

Digestive System

The correct answer for each question is indicated by a .

Another term for the swallowing of food is _____.

- A) digestion
- B) ingestion
- C) deglutition
- D) peristalsis

The serous membrane that passes from the lesser curvature of the stomach and the upper duodenum to the inferior surface of the liver is the _____.

- A) visceral peritoneum
- B) mesentery
- C) greater omentum
- D) lesser omentum

Which of these is not a feature of the mucosa of the gastrointestinal tract?

- A) lamina propria
- B) goblet cells
- C) myenteric plexus
- D) plicae circulares

Adults have _____ true molars.

- A) 4
- B) 8
- C) 12
- D) 16

Teeth are composed of a number of substances, the bulk of which is _____.

- A) enamel
- B) gingiva
- C) cementum

D) dentin

Which of these is not one of the three pairs of extrinsic salivary glands?

A) parotid

B) palatine

C) submandibular

D) sublingual

Within the stomach lining, _____ cells secrete hydrochloric acid.

A) parietal

B) goblet

C) principal

D) argentaffin

During which phase of gastric secretion is gastric juice released?

A) cephalic phase

B) gastric phase

C) intestinal phase

D) All of these are correct.

Which of these is a structural modification unique to the small intestine?

A) plicae circulares

B) villi

C) microvilli

D) All of these are unique to the small intestine.

E) None of these are unique to the small intestine.

The longitudinal muscle layer of the large intestine forms three distinct muscle bands called _____.

A) sigmoid colon

B) taeniae coli

C) haustra

D) epiploic appendages

Within the liver, bile is produced by _____ and secreted into bile canaliculi.

A) Kupffer cells

B) liver lobules

C) hepatocytes

D) acinar cells

The condition in which the liver becomes infused with fibrous tissue and is unable to repair itself is known as _____.

- A) hepatitis**
- ✓ **B) cirrhosis**
- C) jaundice**
- D) hepatoma**

It usually takes between 24 and 48 hours for food to travel the length of the gastrointestinal tract.

- ✓ **A) True**
- B) False**

Parasympathetic impulses to the gastrointestinal tract generally inhibit peristalsis and secretions while impulses from the sympathetic division increase the rate of digestion.

- A) True**
- ✓ **B) False**

The endocrine functions of the pancreas are performed by the pancreatic islets, while the exocrine secretory functions are provided by the pancreatic acini.

- ✓ **A) True**
- B) False**



The Human Digestive System

Use the words in the box to fill in the blanks.

stomach	chewed	food	energy
rectum	liver	mouth	small intestine
waste	saliva	large intestine	digestion
system	swallow	tongue	pharynx
acid	absorbed	liquids	esophagus

All animals need to eat _____ to get _____ to live. But in order to use this food, they have to break it down in a process called _____. And so, all animals have a group of connected organs called the digestive _____.

In humans, the process of digestion begins in the _____ where food is _____ into small pieces by the teeth. The _____ helps by moving these pieces around. These pieces are covered by _____, or spit. The saliva makes the food slippery so that it is easier to _____. It also helps to break down the food.

Once the food is swallowed, it passes through the _____, which is like a gate that sends food into the _____ and air into the lungs. The food travels down the esophagus and into the _____. Once in the stomach the food is mixed with _____ and crushed some more.

After spending some time in the stomach, the food is sent into the _____ where nutrients are _____. The _____ helps by producing some digestive juices called bile. Next, the remaining food goes into the _____ where the _____ are absorbed. The remaining food is called _____ and it is pushed into the _____ where it waits before leaving the body.

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The Human Digestive System



Find the digestive system words below in the grid to the left.



- | | | | |
|-----------|-----------------|-----------|-----------------|
| absorb | excrete | nutrients | small intestine |
| appendix | filter | pancreas | stomach |
| chew | large intestine | pharynx | swallow |
| digest | liver | rectum | teeth |
| esophagus | mouth | saliva | tongue |

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Name..... Class.....

Enzymes Worksheet



1. a) Fill in the gaps in the following sentences using the words in the box below.

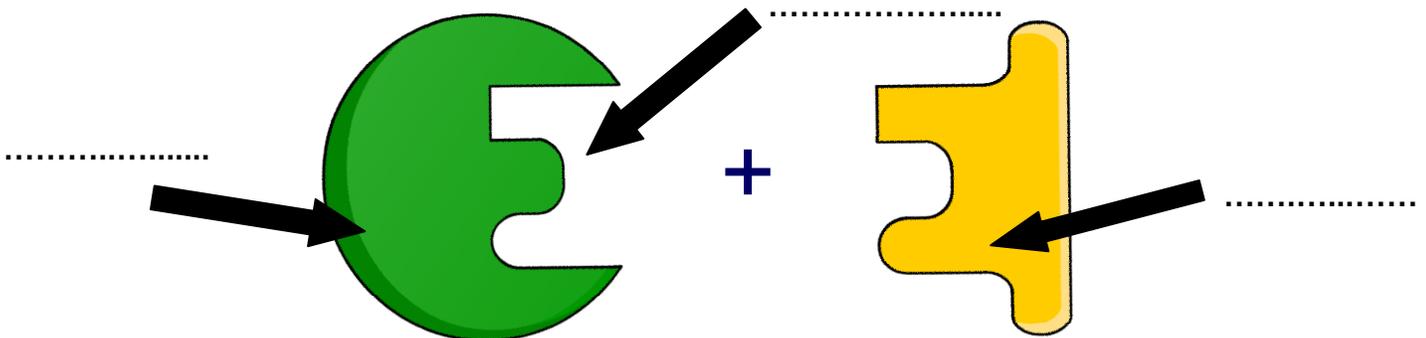
- i) Enzymes are biological that speed up chemical reactions in living organisms.
- ii) Enzymes are protein molecules, which are made up of long chains of
- iii) The sequence and type of amino acids are in each protein, so they produce enzymes with many different shapes and functions.
- iv) The shape of an enzyme is very important to its

different	catalysts	function	the same	amino acids	catalists
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b) Enzymes catalyze chemical reactions involved in important processes in the human body. Name one of these processes.

.....
...

c) Label the image below with the following terms: active site, reactant, enzyme.



d) i) What is the common name for the above model?

.....
.....

ii) Label the two components of this model on the above image.

2. a) Explain what would happen if a reactant molecule with a different shape to the enzyme came into contact with the enzyme's active site.

.....

...

.....

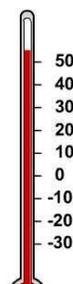
.....

.....



b) Explain what would happen to a reactant molecule if it came into contact with an enzyme's active site that matched its specific shape. Use the space below to draw and explain what would happen. Use the following terms in your answer: enzyme-reactant complex, products, enzyme, reactant, active site.

c) There are many factors that affect the rate of enzyme-catalyzed reactions, including temperature. Name two other factors.



.....
.....

d) i) What would happen to an enzyme if the temperature and pH changed significantly beyond the enzyme's optimum level?

.....

ii) How would this affect enzyme activity?

.....

.....

.....

3. A group of students decided to carry out an investigation to find out how enzyme activity is affected by temperature changes. They put samples of salivary amylase and starch into two test tubes. Salivary amylase is an enzyme that breaks down starch into maltose. Its optimum temperature for activity is around 37°C.

a) What do you think happened to the rate of reaction when they increased the temperature of the first test tube to 37°C?

.....

...

b) What do you think happened to the enzyme activity when the students decreased the temperature of the second test tube to 0°C?

.....

.....

c) Explain what an inhibitor is and what it does.

.....

.....

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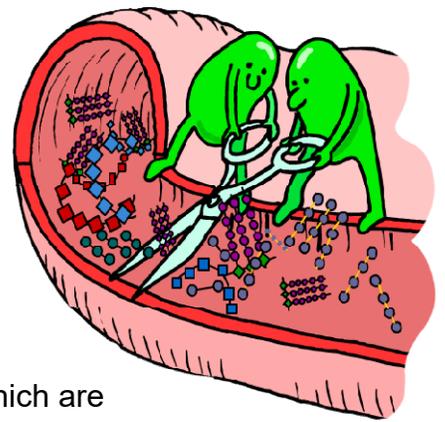
.....

4. a) Fill in the missing words in the following text about enzymes and digestion.

Not all enzymes work inside cells in the body.

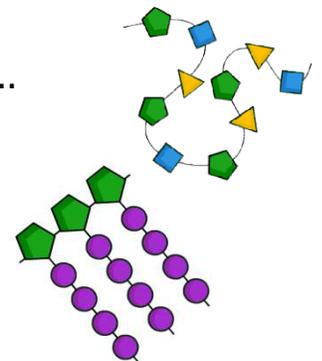
..... enzymes are produced by specialized cells in the pancreas and digestive tract. From there, the enzymes pass out of the cells, into the and small intestine where they come into contact with food molecules.

Here, they catalyze the of large molecules, which are then more easily absorbed by the body.



b) Write down the name of the nutrient next to the enzyme that breaks it down. Use the words in the box below.

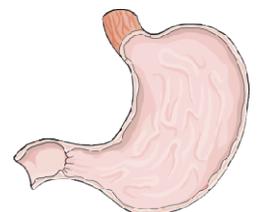
- i) Carbohydrase is an enzyme that breaks down
- ii) Protease is an enzyme that breaks down
- iii) Lipase is an enzyme that breaks down
- iv) Amylase is an enzyme that breaks down



fats sucrose starch proteins carbohydrates hydrochloric acid
--

c) The stomach produces hydrochloric acid which increases the acidity of the stomach to the optimum pH for stomach enzymes to digest the food. However, digestive enzymes found in the small intestine are damaged by strongly acidic conditions. How does the body avoid damaging the digestive enzymes in the small intestine with this strongly acidic pH as the food passes out of the stomach?

.....
.....
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.....
.....



5. a) Biological washing powders contain protein-, fat- and carbohydrate-digesting enzymes to help remove stains. Name one other use for enzymes in the home or industry.

.....

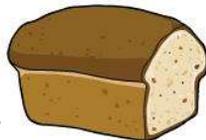
...

b) Give one advantage of using enzymes in industrial manufacturing processes.

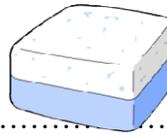
.....



NAME.....



DATE.....



CLA.....



ANSWER THE FOLLOWING QUESTIONS - DO NOT EXCEED THE LINES

1. Why is it essential the simultaneous existence of oceanic trenches and mid-ocean ridges?

2. When can orogenesis take place?

CHOOSE THE CORRECT ANSWER

3. Catabolism is to anabolism as _____ is to _____ :
- a. Exergonic ; spontaneous
 - b. Exergonic ; endergonic
 - c. Free Energy ; entropy
 - d. Work ; energy
4. Most cells cannot harness heat to perform work because:
- a. heat does not involve a transfer of Energy
 - b. temperature is usually uniform throughout a cell
 - c. heat can never be used to do work
 - d. heat must remain constant during work
5. If an enzyme in solution is saturated with substrate, the most effective way to obtain a faster yield of products is to:
- a. add a noncompetitive inhibitor
 - b. add an allosteric inhibitor
 - c. add more substrate
 - d. add more of the enzyme.
6. If an enzyme is added to a solution where its substrate and product are in equilibrium, what will occur?
- a. additional product will be formed
 - b. additional substrate will be formed
 - c. the reaction will change from endergonic to exergonic
 - d. the free energy of the system will change

CLIL MODULE PLANNER

CLIL SUBJECT : SCIENCE
CLIL LANGUAGE : ENGLISH
MODULE TITLE : ENZYMATIC ACTIVITY
TEACHER/S :
CLASS : 5LS / 5LC
NUMBER OF LESSONS : 10 of 60 minutes each
PRIOR KNOWLEDGE

- *proteins and their structure*
- *looking for information on websites in English language*

CONTENT OBJECTIVES

by the end of the module the students will be able to...

- recognize and explain :
Enzymatic activity and expression
control of the activity.

LANGUAGE OBJECTIVES

(Obiettivi linguistici)

by the end of the module the students will be able to...

- *express messages and information using specific and correct vocabulary*
- *know and interpret charts and diagrams*

RESOURCES & MATERIALS

- the internet
- text book and authentic materials
- lab activities , videos, podcast, smart board etc

SKILLS

- collaborative work
- digital competence
- analyzing , making connections and giving reasons about natural phenomena

LANGUAGE SKILLS

- comprehension of scientific texts in English without using the dictionary or without the help of the teacher

<ul style="list-style-type: none"> ➤ comparing and contrasting ➤ describing a process using specific lexis , mastering the syntax 		
ACTIVITIES <i>(Attività)</i>		
TEACHER'S	STUDENTS'	LANGUAGE
<ul style="list-style-type: none"> ➤ Introducing the topic by multimedia, ➤ skimming and scanning documents ➤ worksheets on lexis 	<ul style="list-style-type: none"> ➤ Watching videos ➤ Taking notes ➤ group-work ➤ "fill in the blanks" exercises ➤ glossary 	<ul style="list-style-type: none"> ➤ matching words and definitions, listening and labelling pictures ➤ filling in a table ➤ labelling the stages of a process ➤ filling in the gaps in a text ➤ ordering paragraphs,
FINAL PROJECT		
<i>PPT group presentations – VIDEO PRODUCTION</i>		
ASSESSMENT CRITERIA		
SUMMATIVE	FORMATIVE	
<ul style="list-style-type: none"> ➤ task performance ➤ content mastery ➤ communicative competence 	<ul style="list-style-type: none"> ➤ Participation ➤ Effort ➤ collaborative engagement ➤ confidence 	
ASSESSMENT TASKS		
<ul style="list-style-type: none"> ➤ Tests with two open questions and four multiple choice ➤ subjective tests (oral presentations, written compositions) 		
ATTACHED DOCUMENTS *		

- | | |
|----|--|
| 1. | www.biologyjunction.com/enzyme 20ppt |
| 2. | www.youtube.it/dallachiesa/ Exothermic reaction: Sugar + Sulphuric Acid |
| 3. | Filling in + labelling (att.1) |
| 4. | Test (Att.2) |

*Manca griglia valutazione

CLIL MODULE PLANNER

CLIL SUBJECT : SCIENCE
CLIL LANGUAGE : ENGLISH
MODULE TITLE : PHOTOSYNTHESIS
TEACHERS :
CLASS : 5 LS — 5 LC
NUMBER OF LESSONS : 5 of 60 minutes each
PRIOR KNOWLEDGE
<ul style="list-style-type: none"> ➤ Looking up information on Internet sites in English ➤ Chemistry-basic knowledge: the principles of thermodynamics, the reactions of oxidation-reduction, organic compounds ➤ Cytology: chloroplast functions and structure
CONTENT OBJECTIVES
<p><i>by the end of the module the students will be able to...</i></p> <ul style="list-style-type: none"> ➤ recognize and relate about: <ul style="list-style-type: none"> • the importance of photosynthesis in the ecosystem • the function of light • the steps of photosynthesis ➤ build a food chain and show the absorbed energy flow

LANGUAGE OBJECTIVES

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by the end of the module the students will be able to...

- look up information, analyse and summarize it, even using dictionary
- understand and illustrate concepts, relating them with specific lexis
- interact both with schoolmates and teacher

RESOURCES & MATERIALS

(Risorse & materiali)

- slides
- videos
- websites
- texts accompanied by illustrations
- files MP3
- worksheets
- smart board
- computer
- texts accompanied by illustrations

SKILLS

- Ability to analyse, report and give reasons of phenomena and concepts
- Digital competence

LANGUAGE SKILLS

- Reading comprehension without the help of dictionary
- To describe a process, either orally or in the written form, using specific lexis and mastering the syntax

ACTIVITIES

TEACHER'S	STUDENT'S	LANGUAGE
<ul style="list-style-type: none">➤ Introducing the topic by multimedia, skimming and scanning the documents➤ worksheets on lexis and contents	<ul style="list-style-type: none">➤ Watching videos,➤ taking notes➤ team work➤ glossary	<ul style="list-style-type: none">➤ Matching words and definitions➤ listening and labelling pictures➤ listening and filling-in the gaps

FINAL PROJECT	
➤ PPT group presentations	
ASSESSMENT CRITERIA	
SUMMATIVE	FORMATIVE
<ul style="list-style-type: none"> ➤ task performance ➤ content mastery ➤ communicative competence 	<ul style="list-style-type: none"> ➤ participation ➤ effort ➤ collaborative engagement
ASSESSMENT TASKS	
<ul style="list-style-type: none"> ➤ objective tests: multiple choice, true/false ➤ oral presentations ➤ open questions 	
ATTACHED DOCUMENTS	
<ol style="list-style-type: none"> 1. Video: https://www.youtube.com/watch?v=joZ1EsA5_NY 2. Worksheet 1 3. Worksheet 2 4. Worksheet 3 5. Text 6. Rubric oral presentations 7. Pre test 8. Post test 	

Name: _____ Date: _____ Period: _____

Photosynthesis Worksheet

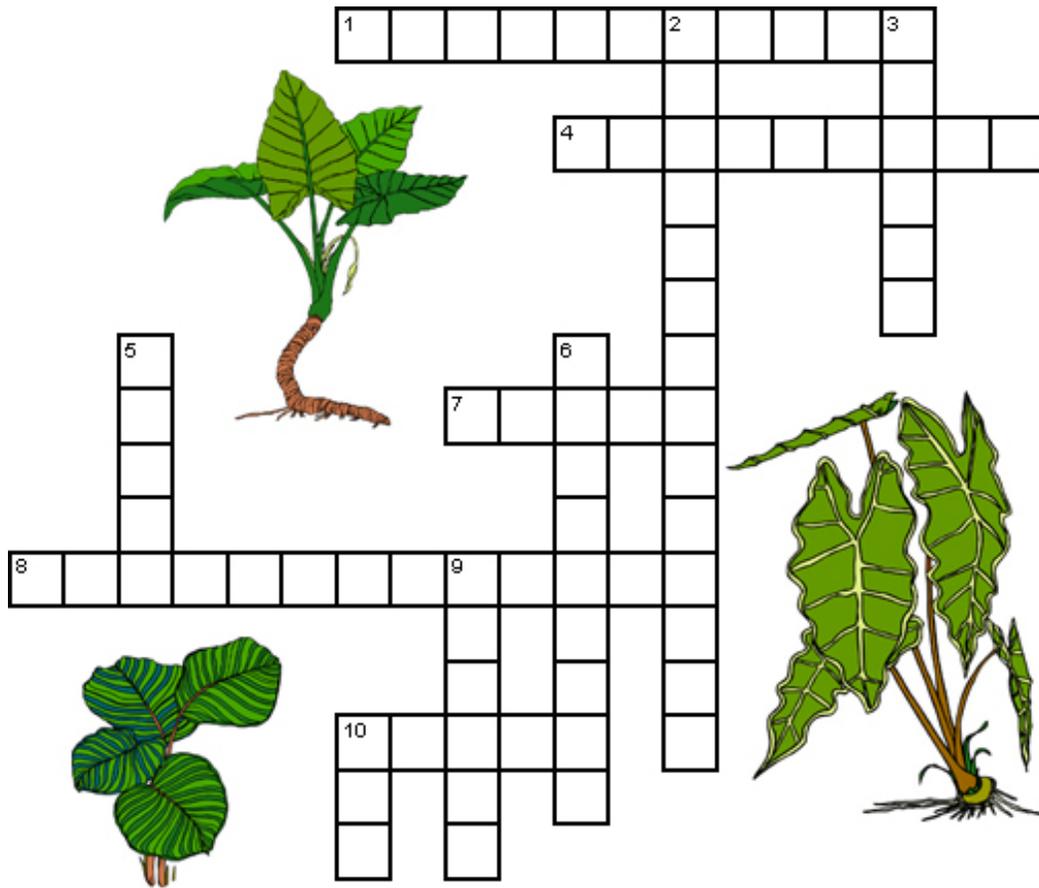
1. What is the overall reaction (*formula*) for photosynthesis?

2. How does this compare to the overall reaction for cellular respiration?

3. Where does the energy for photosynthesis come from?

4. What plant pigments are involved in photosynthesis?
5. Explain why chlorophyll appears green to us in terms of what happens to different wavelengths of light that strike a chlorophyll molecule.
6. In what organelle of a plant cell does photosynthesis take place?
7. What is photosynthesis waste product?
8. What is the overall reaction (*formula*) for cell respiration?
9. In what organelle of a cell does cell respiration take place?
10. What is cell respiration's waste product?

PHOTOSYNTHESIS



Across

- 1 A plant pigment that absorbs sunlight. (11)
- 4 The links between the energy that carnivores get from eating to the energy captured by photosynthesis. (4,5)
- 7 Chlorophyll absorbs every color of sunlight except this. (5)
- 8 A compound needed for photosynthesis. (6,7)
- 10 The product of photosynthesis. (5)

Down

- 2 The process by which plants and some bacteria use the energy from sunlight to produce sugar. (14)
- 3 Part of the plant where photosynthesis generally occurs. (6)
- 5 A compound needed for photosynthesis. (5)
- 6 An animal that eats plants. (9)
- 9 A by-product of photosynthesis. (6)
- 10 Number of molecules of oxygen produced along with one molecule of sugar. (3)

Photosynthesis

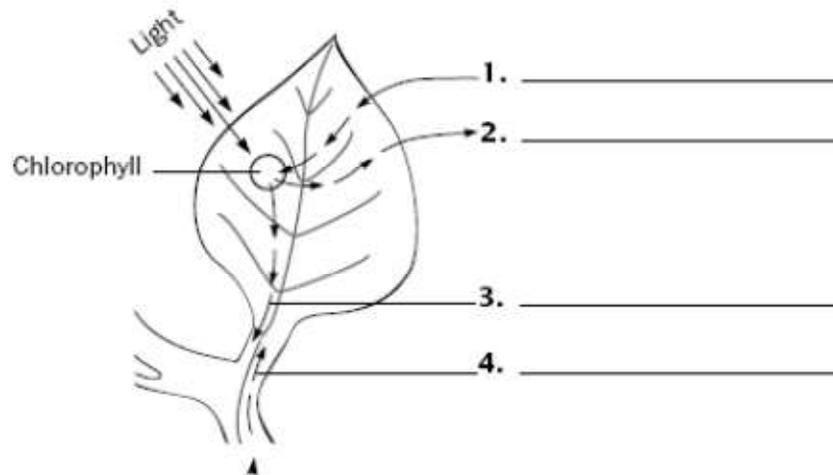
After it is labeled, the diagram below will illustrate photosynthesis. Write each of the following terms on the correct numbered line. Then answer the questions that follow.

Carbon Dioxide

Glucose

Oxygen

Water



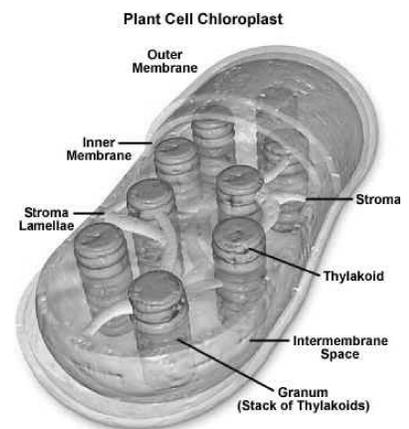
5. a. In photosynthesis, what substances come in from the outside?
b. What substances are produced?

Photosynthesis: Making Energy

Objective: _____

Chloroplasts

Photosynthesis is a process in which sunlight energy is used to make glucose. The site of photosynthesis is in the chloroplast - an organelle found in the leaves of green plants. The main functions of chloroplasts are to produce food (glucose) during photosynthesis, and to store food energy. Chloroplasts contain the pigment, *chlorophyll*. Chlorophyll absorbs most of the colors in the color spectrum, and reflects only green and yellow wavelengths of light. This is why we see leaves as green or yellow - because these colors are reflected into our eyes.



1. What is photosynthesis?

2. Where does photosynthesis occur?

3. What are chloroplasts and where are they found?

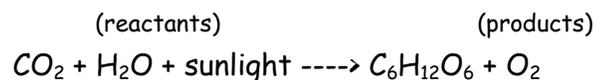
4. What are the two main functions of chloroplasts?

5. Why do most leaves appear green?

6. What is the primary pigment found in the chloroplast?

Photosynthesis

Glucose is another name for sugar. The molecular formula for glucose is $C_6H_{12}O_6$. Plants make sugar by using the energy from sunlight to transform CO_2 from the air with water from the ground into glucose. This process, called photosynthesis occurs in the chloroplast of the plant cell. During this process, oxygen (O_2) is created as a waste product and is released into the air for us to breath. The formula for photosynthesis is:



This formula says that carbon dioxide + water molecules are combined with the energy from sunlight to produce sugar and oxygen. The reactants in photosynthesis (what is used) are CO_2 , water and sun. The plant gets water from the ground through its roots. The plant collects carbon dioxide from the air. Much of the carbon dioxide comes from living organisms that exhale (breath it out) it, but some also comes from factory smokestacks and car fumes.

7. What is the formula for photosynthesis?

8. What three things are used to make glucose in photosynthesis?

9. Where does the water come from?

10. Where does the water enter the plant?

11. Name 3 some sources of CO_2 .

12. What type of energy does the plant use to convert CO_2 and H_2O into sugar?

The products are **glucose** and **oxygen**. The glucose produced is used by the plant for energy and growth. We also use this glucose by eating plants. The oxygen produced is released into the air for us to breath. Photosynthesis is essential for all life on earth, because it provides food and oxygen. Plants are considered autotrophs because unlike us humans, they can make their own food using this process.

13. What is produced in photosynthesis?

14. What is the glucose used for?

15. What is the oxygen used for?

16. Here are three different ways to visualize the photosynthesis reaction: Is it easier for you to understand the reaction by using pictures, words, or symbols (see above)? Why?

Photosynthesis in pictures	Photosynthesis in words	Photosynthesis in symbols
	Carbon dioxide and water combine with sunlight to create oxygen and glucose.	$CO + H_2O \xrightarrow{\text{light}} C_6H_{12}O_6 + O_2$

Essential Question: Describe, using scientific terms, how plants turn sunlight into energy? Make sure to refer to the chemical equation to photosynthesis and discuss the reactants and products.

Cellular Respiration: Breaking down Energy

Objective: _____

Mitochondria are known as the powerhouses of the cell. They are **organelles** that act like a digestive system that takes in nutrients, breaks them down, and creates energy for the cell. The process of creating cell energy is known as **cellular respiration**. Most of the chemical reactions involved in cellular respiration happen in the mitochondria. A mitochondrion is shaped perfectly to maximize its efforts.

1. What process happens in the mitochondria?
2. What is the purpose of the process in #1 (what does it create)?



Introduction to Cellular Respiration

Organisms, such as plants and algae, can trap the energy in sunlight through photosynthesis and store it in the chemical bonds of carbohydrate molecules. The principal carbohydrate formed through photosynthesis is **glucose**. Other types of organisms, such as animals, fungi, protozoa, and a large portion of the bacteria, are unable to perform this process. Therefore, these organisms must rely on the carbohydrates formed in plants to obtain the energy necessary for their metabolic processes. This means they must eat plants and other animals in order to gain energy.

4. Some organisms perform photosynthesis to produce energy. Other organisms cannot do photosynthesis. What can they do in order to generate energy? _____

5. Animals and other organisms obtain the energy available in carbohydrates through the process of **cellular respiration**. What is the purpose of cellular respiration? _____

Cells take the carbohydrates into their cytoplasm, and through a complex series of metabolic processes, they break down the carbohydrates and release the energy. The energy is generally not needed immediately; rather it is used to combine adenosine diphosphate (ADP) with another phosphate to form adenosine triphosphate (ATP) molecules. The **ATP** can then be used for processes in the cells that require energy, much as a battery powers a mechanical device. During the process of cellular respiration, carbon dioxide is given off. Plant cells can use this carbon dioxide during photosynthesis to form new carbohydrates.

6. What happens to carbohydrates during cellular respiration?

7. What is the chemical energy in the cell called? _____

8. What does ATP stand for?

9. What is one product of cellular respiration? _____

10. How do animals get rid of the carbon dioxide? _____ What body system is involved with removing this waste? _____

Also in the process of cellular respiration, oxygen gas is required to serve as an acceptor of electrons. This oxygen is identical to the oxygen gas given off during photosynthesis.

11. (Circle one) Oxygen is a PRODUCT OR REACTANT of respiration? (In other words, is it needed or released?)

Energy-producing process	Reaction	Location in cell
Photosynthesis	12. _____	Chloroplast
Cellular respiration	$C_6H_{12}O_6 + 6 O_2 \rightarrow 6 H_2O + 6CO_2 + \text{energy}$	13. _____

Reflection Question: Explain the relationship between photosynthesis and cellular respiration. Be sure to include the main purpose of both and where they occur inside the cell.

HUMANS AND PLANTS

Humans need plants. All animals do. Humanity's relationship with plants has actually made it possible for us to have a civilization. Before we had cities, humans went around in little packs and were hunter-gatherers. We ate rats, birds, berries, and whatever food we could find. It wasn't very efficient. One day someone had the bright idea to plant the plants we like to eat. When humans did that, they were able to stay in one place full time. Then came the cities and a huge system of agriculture to support millions of people.



BIG TIME FARMING

As time has passed, we have taken farming to new levels. We have manipulated species to create big apples and large ears of corn. The plants would never have done it in the wild. It took man to change the plants. We are also moving toward the **genetic alteration** of plants. We're trying to make plants that are resistant to disease and bugs. These stronger plants will allow our crops to give us more food from the same amount of space.

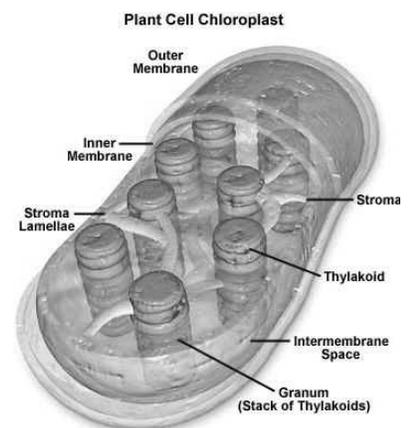
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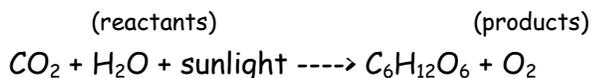
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1. Genetic alteration probably refers to altering what.... _____ (found in the nucleus)

Post-Test Photosynthesis

The correct answer for each question is indicated by a ✓.

1

If ATP synthase is enzymatically neutralized within a cell, which of the following consequences would be the most logical outcome?

- A) Negative feedback will be decreased, causing faster ATP production.
- B) The electron transport chain will slow down.
- C) The cell will have no mechanism to make ATP and will die.
- ✓ D) Phosphorylation of ADP will decrease.
- E) All of the above will occur.

2

For one molecule of glucose, what is the maximum number of ATP molecules created directly from the Krebs cycle?

- A) 1
- ✓ B) 2
- C) 3
- D) 4
- E) 5

3

What is the name of the mechanism by which pyruvate dehydrogenase is inhibited by the end-product of the biochemical pathway?

- A) Anabolism

- B) Catabolism
- C) Regulation
- ✓ D) Negative inhibition
- E) Anti-phosphorylation

4

During yeast fermentation, CO₂ is produced, but animal cells do not produce CO₂. What is the difference in their fermentation strategies?

- ✓ A) Yeast fermentation creates ethanol.
- B) Animal cells create ATP and ethanol.
- C) Animal cells do not undergo fermentation.
- D) Yeast cells ferment pyruvate to lactic acid.
- E) There is no difference in their fermentation pathways.

5

Which of the following argues most strongly for glycolysis as one of the most primitive biochemical pathway?

- A) It does not require oxygen in order to function.
- B) It occurs in the cytoplasm of cells.
- C) It is exergonic, and therefore obeys the laws of thermodynamics which are fundamental to chemistry and physics.
- ✓ D) This biochemical pathway has been retained by all living organisms.
- E) There is no evidence that glycolysis is primitive

6

Cellular respiration is

- A) the utilization of oxygen in a cell.
- ✓ B) the oxidation of organic compounds to extract energy from chemical bonds.
- C) production of ATP in a cell.
- D) the conversion of the energy of sunlight to chemical energy.
- E) reduction of NADH to drive chemical reactions in a cell.

7

Because it has 6 carbons, glucose can power 6 cycles ("turns") of the Krebs cycle

- A) True
- ✓ B) False

8

Which of the following statements is *false*?

- A) Some ATP is consumed in glycolysis.
- ✓ B) The end product of glycolysis is lactic acid or ethanol.
- C) Some ATP is created through substrate-level phosphorylation.
- D) Overall, glycolysis releases energy and is thus termed *exergonic*.
- E) All of the above statements are true.

9

Where in a eukaryotic cell does pyruvate oxidation occur?

- ✓ A) In the mitochondrion.
- B) In the electron transport chain.
- C) In the cytoplasm, just like in prokaryotes.

- D) Anywhere in the cell, provided pyruvate dehydrogenase is present.
 - E) In ribosomes.
-

10

The Krebs cycle is responsible for making most of the cell's ATP.

- A) True
 - B) False
-

11

Which of the following is most directly responsible for creation of ATP at the mitochondrial inner membrane?

- A) NADH
 - B) A proton gradient
 - C) FADH²
 - D) Movement of electrons along the membrane itself
 - E) The activity of NADH dehydrogenase
-

12

Which of these is one of the correct reasons that less than the theoretical amount of ATP (36-38) is actually created during aerobic respiration?

- A) Because of the efficiency of chemiosmosis, the result is actually much higher.
 - B) FADH₂ actually consumes some ATP.
 - C) The cell membrane is somewhat leaky to electrons.
 - D) The proton gradient can facilitate other tasks besides ATP synthesis.
 - E) You have to add in ATP produced during glycolysis, which has nothing to do with oxidation.
-

13

True or False: The purpose of fermentation is to make ethanol.

- A) True
 - B) False
-

14

What process must occur to allow amino acids to be catabolized for energy?

- A) Deamination
 - B) Depurination
 - C) Dephosphorylation
 - D) Dehydration
 - E) Deoxygenation
-

15

Primitive prokaryotes probably used H₂S instead of water as a source of electrons. What would have been released into the environment as photosynthesis occurred?

- A) Gaseous hydrogen
- B) Liquid hydrogen
- C) Water
- D) HS
- E) Sulfur

The correct answer for each question is indicated by a ✓.

1

Why does NAD^+ serve as important electron carrier?

- ✓ A) It is readily reduced and oxidized.
- B) It is insoluble and is stationary within the cell.
- C) It can accept electrons in a variety of positions along its length.
- D) It "protects" electrons from winding up in fatty acid precursors where the energy would be wasted.
- E) All of the above are correct.

2

What products result from the complete oxidation of glucose?

- A) CO_2
- B) ATP
- C) NADH
- D) FADH_2
- ✓ E) All of these result from glucose oxidation.

3

Why must NAD^+ be present during glycolysis?

- A) It creates pyruvate directly from glucose.
- ✓ B) A glycolysis intermediate must be oxidized in order to receive a phosphate so that substrate-level phosphorylation may occur.
- C) It powers the electron transport chain.
- D) It is a coenzyme which allows the 6 carbons of glucose to separate from each other, leading to two three-carbon products.
- E) This is a trick question: NAD^+ is only involved in the Krebs cycle.

4

What is/are the product(s) of pyruvate oxidation?

- A) O_2
- ✓ B) Acetyl-CoA
- C) NAD^+
- D) ATP
- E) All of the above are created during pyruvate oxidation

5

How many CO_2 molecules are released specifically from the Krebs cycle for each glucose molecule consumed?

- A) 1
- B) 2
- C) 3
- ✓ D) 4
- E) 6

Scoring Rubric for Oral Presentations:

		Total	
--	--	--------------	--

Category	Scoring Criteria	Points	Score
Organization (15 points)	The type of presentation is appropriate for the topic and audience.	5	
	Information is presented in a logical sequence.	5	
	Presentation appropriately cites requisite number of references.	5	
Content (45 points)	Introduction is attention-getting, lays out the problem well, and establishes a framework for the rest of the presentation.	5	
	Technical terms are well-defined in language appropriate for the target audience.	5	
	Presentation contains accurate information.	10	
	Material included is relevant to the overall message/purpose.	10	
	Appropriate amount of material is prepared, and points made reflect well their relative importance.	10	
	There is an obvious conclusion summarizing the presentation.	5	
Presentation (40 points)	Speaker maintains good eye contact with the audience and is appropriately animated (e.g., gestures, moving around, etc.).	5	
	Speaker uses a clear, audible voice.	5	
	Delivery is poised, controlled, and smooth.	5	
	Good language skills and pronunciation are used.	5	
	Visual aids are well prepared, informative, effective, and not distracting.	5	
	Length of presentation is within the assigned time limits.	5	
	Information was well communicated.	10	
Score	Total Points	100	

PLATE TECTONICS CYCLE : Name: Date:

What do earthquakes and volcanoes have to do with plate tectonics?

PREDICTION: _____

MATERIALS: Wall map of earthquakes and/or volcanoes of the world; NOAA/NESDIS icosahedron globe, crayons
 PROCEDURE: Using the information about what defines a "plate", color the continents

so they can be easily seen. Use a pencil to draw on the map, where you think the plates are. Look at the larger maps for more detailed information to help you decide. Cut, fold, and paste the globe together.

ANSWER THE FOLLOWING QUESTIONS:

1. How many plates have you defined? _____

2. Are there any "problem" areas? _____

List them: _____

3. Where are there earthquakes and no plate edges? _____

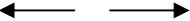
4. Where do two plates meet in the United States? _____

CONCLUSION: How many plates did you find? What was your criteria for defining these plates?

Name: _____ Date: _____

Directions: Use the words below to complete the table. Some words might be used more than once, and some words might not be used at all.

mountain ranges Mariana Trench divergent glaciers volcanoes
 San Andreas Fault transform earthquakes deserts convergent
 Rocky Mountains floods Himalayas tsunami trenches Mid-Atlantic
 Ridge

Direction of Movement	Motion	Type of Boundary	Example(s)	Effect(s)
	Two plates slide against each other in opposite directions.			
	Two plates come together, one sliding under the other or both rising up.			
	Two plates move apart.			

CLIL MODULE PLANNER

CLIL SUBJECT : SCIENCE
CLIL LANGUAGE : ENGLISH
MODULE TITLE : PLATE TECTONICS
TEACHER/S :
CLASS : 5LS/5LC
NUMBER OF LESSONS : 5 of 60 minutes each
PRIOR KNOWLEDGE
<ul style="list-style-type: none">➤ the heart of the Earth➤ convective motions➤ looking up information on internet sites in English language
CONTENT OBJECTIVES
<i>by the end of the module the students will be able to...</i> <ul style="list-style-type: none">➤ understand the endogenetic phenomena of the Earth➤ and volcanic activities and earthquakes
LANGUAGE OBJECTIVES
<i>by the end of the module the students will be able to...</i> <ul style="list-style-type: none">➤ express messages and information using a specific and correct lexis➤ know and interpret charts and diagrams
RESOURCES & MATERIALS

<ul style="list-style-type: none"> ➤ The Internet ➤ text book and authentic materials ➤ lab activities , videos, podcast, smart board , etc. 		
SKILLS		
<ul style="list-style-type: none"> ➤ collaborative work ➤ digital competence ➤ analyzing , making connections and giving reasons about natural phenomena 		
LANGUAGE SKILLS		
<ul style="list-style-type: none"> ➤ To understand a scientific text in English without using the dictionary or without the help of the teacher ➤ comparing and contrasting phenomena ➤ to describe a process using specific lexis , mastering the syntax 		
ACTIVITIES		
TEACHER'S	STUDENTS'	LANGUAGE
<ul style="list-style-type: none"> ➤ Introducing the topic by multimedia ➤ skimming and scanning the documents ➤ worksheets on lexis 	<ul style="list-style-type: none"> ➤ Watching videos ➤ Taking notes ➤ Group-work "fill in the blanks" exercises ➤ Glossary 	<ul style="list-style-type: none"> ➤ matching words and definitions ➤ listening and labelling pictures ➤ filling in a table ➤ labelling the stages of a process ➤ filling in the gaps in a text ➤ ordering paragraphs
FINAL PROJECT		
<ul style="list-style-type: none"> ➤ <i>PPT</i> GROUP PRESENTATIONS 		
ASSESSMENT CRITERIA		
SUMMATIVE	FORMATIVE	
<ul style="list-style-type: none"> ➤ task performance, 	<ul style="list-style-type: none"> ➤ participation, 	

➤ content mastery, ➤ communicative competence	➤ effort, ➤ collaborative engagement ➤ confidence
ASSESSMENT TASKS	
➤ Tests with two open questions and four multiple choice ➤ subjective tests (oral presentations, written compositions)	
ATTACHED DOCUMENTS *	
www.tectonics.caltech.edu/.../Earth&PlateTectonics.. 5. Open Questions (Att.1) 6. Filling in (Att.2) 7.	

*Mancano griglia valutazione

CLIL MODULE PLANNER – Quarta A/B TE

CLIL SUBJECT : BUILDING SITE SAFETY – BUILDIND SITE MANAGEMENT
CLIL LANGUAGE : ENGLISH
MODULE TITLE : How to start a building site and make excavations
TEACHER: Prof.ssa ROSA RICCONI
CLASS : Quarta A/BTE
NUMBER OF LESSONS: ???????
PRIOR KNOWLEDGE
➤ <i>Knowledge of the fundamental aspects of the Italian law concerning building site management;</i> ➤ <i>Knowledge of the specific lexis (L1)</i> ➤ <i>knowledge of the soil characteristics</i>

CONTENT OBJECTIVES		
<ul style="list-style-type: none"> ➤ To recognize the importance of safety rules in order to prevent accidents; ➤ To compare UK and Italian laws on building site safety; ➤ To create a presentation, a video or a planimetry of a building site; 		
<i>by the end of the module the students will be able to...</i>		
<ul style="list-style-type: none"> ➤ To learn vocabulary about building sites; ➤ To describe the process of excavation on a building site; 		
LANGUAGE OBJECTIVES		
<i>by the end of the module the students will be able to...</i>		
<ul style="list-style-type: none"> ➤ Use the present simple for routine activities and processes ➤ Use the vocabulary related to safety, health, building sites; ➤ Talk about safety topics; reading texts related to the construction site; 		
RESOURCES & MATERIALS		
<ul style="list-style-type: none"> ➤ Slides; ➤ Websites; https://youtu.be/1h9U7VrVbTY ➤ Worksheets; ➤ Videos; ➤ Computer; 		
SKILLS		
<ul style="list-style-type: none"> ➤ Making connections and comparisons; ➤ Analyzing; ➤ Giving reasons; ➤ Reporting; ➤ Collaborative work; 		
LANGUAGE SKILLS		
<ul style="list-style-type: none"> ➤ Speaking: talking about building site safety ➤ Listening: listening and note-taking activity for specific information; ➤ Reading: reading texts for specific information; 		
ACTIVITIES		
TEACHER'S	STUDENTS'	LANGUAGE
<ul style="list-style-type: none"> ➤ Brainstorming; ➤ Short introduction on content and activities; ➤ Give worksheet; 	<ul style="list-style-type: none"> ➤ Vocabulary exercises; ➤ Listening and note-taking; ➤ Matching activity; ➤ Watching videos; 	<ul style="list-style-type: none"> ➤ <i>matching words and definitions;</i> ➤ <i>matching pictures and definitions;</i> ➤ <i>listen and label a picture;</i> ➤ <i>fill in a table;</i> ➤ <i>label the stages of a process;</i>

		➤ <i>fill in the gaps in a text;</i>
FINAL PROJECT		
➤ <i>Planimetry of a building site – Oral Report;</i> ➤ <i>Video (Use web or original materials)</i> ➤ <i>Rendering of an excavation site (Autocad)</i>		
ASSESSMENT CRITERIA <i>(Criteri di verifica)</i>		
SUMMATIVE <i>(Sommativa)</i>		FORMATIVE <i>(Formativa)</i>
➤ Content mastery; ➤ Communicative skills; ➤ communicative competence;		➤ Participation; ➤ Effort; ➤ Collaborative Engagement; ➤ Confidence;
ASSESSMENT TASKS		
➤ Multiple choice; ➤ Short oral presentation; ➤ Reading comprehension; ;		
ATTACHED DOCUMENTS		
1.	Worksheet 1	
2.	Final test	
3.	Evaluation grid	
4.	Students Feedback questionnaire	

CLIL MODULE PLANNER – Quarta A/B TE

CLIL SUBJECT : BUILDING SITE SAFETY – BUILDIND SITE MANAGEMENT
CLIL LANGUAGE : ENGLISH
MODULE TITLE : How to start a building site and make excavations
TEACHER: Prof.ssa ROSA RICCONI
CLASS : Quarta A/BTE
NUMBER OF LESSONS: ???????
PRIOR KNOWLEDGE

<ul style="list-style-type: none"> ➤ <i>Knowledge of the fundamental aspects of the Italian law concerning building site management;</i> ➤ <i>Knowledge of the specific lexis (L1)</i> ➤ <i>knowledge of the soil characteristics</i> 		
CONTENT OBJECTIVES		
<ul style="list-style-type: none"> ➤ To recognize the importance of safety rules in order to prevent accidents; ➤ To compare UK and Italian laws on building site safety; ➤ To create a presentation, a video or a planimetry of a building site; 		
<i>by the end of the module the students will be able to...</i>		
<ul style="list-style-type: none"> ➤ To learn vocabulary about building sites; ➤ To describe the process of excavation on a building site; 		
LANGUAGE OBJECTIVES		
<i>by the end of the module the students will be able to...</i>		
<ul style="list-style-type: none"> ➤ Use the present simple for routine activities and processes ➤ Use the vocabulary related to safety, health, building sites; ➤ Talk about safety topics; reading texts related to the construction site; 		
RESOURCES & MATERIALS		
<ul style="list-style-type: none"> ➤ Slides; ➤ Websites; https://youtu.be/1h9U7VrVbTY ➤ Worksheets; ➤ Videos; ➤ Computer; 		
SKILLS		
<ul style="list-style-type: none"> ➤ Making connections and comparisons; ➤ Analyzing; ➤ Giving reasons; ➤ Reporting; ➤ Collaborative work; 		
LANGUAGE SKILLS		
<ul style="list-style-type: none"> ➤ Speaking: talking about building site safety ➤ Listening: listening and note-taking activity for specific information; ➤ Reading: reading texts for specific information; 		
ACTIVITIES		
TEACHER'S	STUDENTS'	LANGUAGE
<ul style="list-style-type: none"> ➤ Brainstorming; ➤ Short introduction on content 	<ul style="list-style-type: none"> ➤ Vocabulary exercises; ➤ Listening and 	<ul style="list-style-type: none"> ➤ <i>matching words and definitions;</i> ➤ <i>matching pictures and definitions;</i>

<ul style="list-style-type: none"> ➤ and activities; ➤ Give worksheet; 	<ul style="list-style-type: none"> ➤ note-taking; ➤ Matching ➤ activity; ➤ Watching videos; 	<ul style="list-style-type: none"> ➤ <i>listen and label a picture;</i> ➤ <i>fill in a table;</i> ➤ <i>label the stages of a process;</i> ➤ <i>fill in the gaps in a text;</i>
FINAL PROJECT		
<ul style="list-style-type: none"> ➤ <i>Planimetry of a building site – Oral Report;</i> ➤ <i>Video (Use web or original materials)</i> ➤ <i>Rendering of an excavation site (Autocad)</i> 		
ASSESSMENT CRITERIA <i>(Criteri di verifica)</i>		
SUMMATIVE <i>(Sommativa)</i>	FORMATIVE <i>(Formativa)</i>	
<ul style="list-style-type: none"> ➤ Content mastery; ➤ Communicative skills; ➤ communicative competence; 	<ul style="list-style-type: none"> ➤ Participation; ➤ Effort; ➤ Collaborative Engagement; ➤ Confidence; 	
ASSESSMENT TASKS		
<ul style="list-style-type: none"> ➤ Multiple choice; ➤ Short oral presentation; ➤ Reading comprehension; ; 		
ATTACHED DOCUMENTS		
<ol style="list-style-type: none"> 1. Worksheet 1 2. Final test 3. Evaluation grid 4. Students Feedback questionnaire 		

Question module 1_IV CLIL

1. Ogni scavo deve essere opportunamente segnalato da apposita cartellonistica

T F

2. E' necessario effettuare la recinzione del cantiere e dello scavo.

T F

http://www.constructionknowledge.net/sitework/sitework_excavation.php
http://www.exponent.com/deep_excavation_urban_construction/
<http://www.level.org.nz/health-and-safety/working-at-height/excavations-and-trenches/>
<https://www.tes.com/teaching-resource/images-and-pictures-of-building-construction-sites-and-excavations-in-photos-of-amsterdam-city-6426835>

WORKSHEET 1

Watch the video and put the sentences illustrating the phases of the excavation work in the right order:

<https://youtu.be/S9KdK2cEecE>

- 1 the digging is carried out
2. the ground is levelled and made more compact
- 3 a temporary spot mark is pinned in the ground to signal the excavation limits
4. the exact depth of the excavation is set by a laser level
5. the digger starts the digging work on an established spot
6. Formworks are put on the ground in order to pour the concrete

NOW ANSWER THESE QUESTIONS

1. WHAT TYPE OF EXCAVATIONS ARE THEY DOING

2. WHAT DOES THE STEADY SOUND OF THE TOOL MEAN?

WORKSHEET 1

Watch the video and put the sentences illustrating the phases of the excavation work in the right order:

<https://youtu.be/S9KdK2cEecE>

1 the digging is carried out

2. the ground is levelled and made more compact

3 a temporary spot mark is pinned in the ground to signal the excavation limits

4. the exact depth of the excavation is set by a laser level

5. the digger starts the digging work on an established spot

6. Formworks are put on the ground in order to pour the concrete

NOW ANSWER THESE QUESTIONS

1. WHAT TYPE OF EXCAVATIONS ARE THEY DOING?

2. WHAT DOES THE STEADY SOUND OF THE TOOL MEAN?

QUESITI MODULO 1_Quarta CLIL

3. Ogni scavo deve essere opportunamente segnalato da apposita cartellonistica

V F

4. E' necessario effettuare la recinzione del cantiere e dello scavo.

V F

QUESITI MODULO 1_Quarta CLIL

5. Ogni scavo deve essere opportunamente segnalato da apposita cartellonistica

V F

6. E' necessario effettuare la recinzione del cantiere e dello scavo.

V F

ASSESSMENT GRIDS PPT

Scores	Content and presentation Descriptors	Accuracy Descriptors
1 unsatisfactory	The presented texts chosen are not relevant to the topic, there are texts which show no sign of thoughtful choice, covering the whole slide copied from the Internet. Student just reads the text, is unable to answer	Student's performance is just reading the text with pronunciation mistakes which disturb understanding of the presentation
2 satisfactory	audience's questions about the theme. The material chosen and created is not logically ordered, the main points may be left out. Though the presentation gives some relevant information about the topic. The student mostly reads the text from the screen but is able to answer the	Student has mistakes in pronunciation; the text on the screen contains spelling mistakes. The structure of sentences may be wrong. The student does not understand some of audience's questions.

<p>3 good</p>	<p>Audience's questions. The material chosen for the presentation is relevant to the topic, is logically organized, the main points and glossary pointed out. The student has a rather good command of the material, is able to answer the audience's questions, though at least some questions may cause a problem</p>	<p>There occur some pronunciation mistakes (1-3) in new notions. The text on the screen contains no mistakes, except for the glossary in which some words are given in the plural or past forms. The student understands the questions and is able to answer them mostly grammatically correctly.</p>
<p>4 excellent</p>	<p>Student has used several sources for his presentation. The material is logically sequenced, the main points are highlighted. The glossary is chosen relevant to the topic. The design and visuals in slides are thought fully chosen. The student shows a complete and thorough knowledge of the theme, is able to answer audience's and teacher's questions, has prepared tasks for peers</p>	<p>Student has a good command of pronunciation. The text of the presentation does not contain any faults. The glossary and questions provided for audience do not contain mistakes. The student understands questions and gives expanded answers to them showing a good command of lexical repertoire relevant to the topic.</p>

ASSESSMENT GRIDS

<p>Scores</p>	<p>Content and presentation Descriptors</p>	<p>Accuracy Descriptors</p>
<p>1 unsatisfactory</p>	<p>The presented texts chosen are not relevant to the topic, there are texts which show no sign of thoughtful choice, covering the whole slide copied from the Internet. Student just reads the text, is unable to answer</p>	<p>Student's performance is just reading the text with pronunciation mistakes which disturb understanding of the presentation</p>
<p>2 satisfactory</p>	<p>audience's questions about the theme. The material chosen and created is not logically ordered, the main points may be left out. Though the presentation gives some relevant information about the topic. The student mostly reads the text from the screen but is able to answer the</p>	<p>Student has mistakes in pronunciation; the text on the screen contains spelling mistakes. The structure of sentences may be wrong. The student does not understand some of audience's questions.</p>

<p>3 good</p>	<p>Audience's questions. The material chosen for the presentation is relevant to the topic, is logically organized, the main points and glossary pointed out. The student has a rather good command of the material, is able to answer the audience's questions, though at least some questions may cause a problem</p>	<p>There occur some pronunciation mistakes (1-3) in new notions. The text on the screen contains no mistakes, except for the glossary in which some words are given in the plural or past forms. The student understands the questions and is able to answer them mostly grammatically correctly.</p>
<p>4 excellent</p>	<p>Student has used several sources for his presentation. The material is logically sequenced, the main points are highlighted. The glossary is chosen relevant to the topic. The design and visuals in slides are thought fully chosen. The student shows a complete and thorough knowledge of the theme, is able to answer audience's and teacher's questions, has prepared tasks for peers</p>	<p>Student has a good command of pronunciation. The text of the presentation does not contain any faults. The glossary and questions provided for audience do not contain mistakes. The student understands questions and gives expanded answers to them showing a good command of lexical repertoire relevant to the topic.</p>

Self-evaluation student grid

STUDENT'S NAME				
CLASS				
L2:				
SUBJECT				
	General issues			
MY EVALUATION	1 lacking	2 adequate	3 good	4 excellent
a. Evaluation of the lesson as a whole				
b. Content acquisition				
c. Concepts development				
d. Involvement in communication				
e. Use of L2				
f. Problem-solving activities				
g. Individual behaviour				
h. Behaviour in the group				

Specific issues:

The strategies used and how often:	Always or very often	Often	Sometimes	Seldom/ never
a. I listened to the teacher's explanations				
b. I answered the teacher's questions.				
c. I answered my mates' questions.				
d. I used the examples presented by the teacher.				
e. I repeated verbally what I had previously heard, read or written.				

f. I tried to express orally, in my own words what I had heard, read or written.				
g. I used images, grids or graphs as a stimulus to speaking.				
h. others				

When I speak in a foreign language I consider important:	Very important	Important	Partially important	Not important
a. the correct pronunciation of words				
b. the ability to improvise				
c. knowledge of vocabulary				
d. knowledge of the contents				
e. the use of facial expressions, gestures and body movements				
f. grammatical correctness				
g. clarity of exposition				
h. the ability to reformulate				
i. check that the others understand me when I speak				
j. others:				
The problems I had:	Always or very often	Often	Sometimes	Seldom/ never
a. I did not know grammar in the foreign language.				
b. I did not know enough vocabulary in the foreign language.				
c. I did not know the contents of the non-linguistic subject				

d. I did not understand the teacher's questions.				
e. I was not interested in the non-linguistic subject.				
f. Others:				
g. clarity of exposition				
h. the ability to reformulate				
i. check that the others understand me when I speak				
j. others:				

CLIL MODULE PLANNER

CLIL SUBJECT : BUILDING SITE SAFETY – BUILDIND SITE MANAGEMENT
CLIL LANGUAGE : ENGLISH
MODULE TITLE : <i>How to start a building site and make excavations</i>
TEACHERS :
CLASS : 4TE
NUMBER OF LESSONS: ???????
PRIOR KNOWLEDGE
<ul style="list-style-type: none"> ➤ Knowledge of the fundamental aspects of the Italian law concerning building site management; ➤ Knowledge of the specific lexis (L1) ➤ knowledge of the soil characteristics
CONTENT OBJECTIVES
<ul style="list-style-type: none"> ➤ To recognize the importance of safety rules in order to prevent accidents; ➤ To compare UK and Italian laws on building site safety; ➤ To create a presentation, a video or a planimetry of a building site
<i>by the end of the module the students will be able to...</i>
<ul style="list-style-type: none"> ➤ learn vocabulary about building sites; ➤ describe the process of excavation on a building site

LANGUAGE OBJECTIVES

by the end of the module the students will be able to...

- Use the present simple for routine activities and processes
- Use the vocabulary related to safety, health, building sites;
- Talk about safety topics; reading texts related to the construction site;

RESOURCES & MATERIALS

- Slides;
- Websites; <https://youtu.be/1h9U7VrVbTY>
- Worksheets;
- Videos;
- Computer

SKILLS

- Making connections and comparisons;
- Analyzing;
- Giving reasons;
- Reporting;
- Collaborative work

LANGUAGE SKILLS

- Speaking: talking about building site safety
- Listening: listening and note-taking activity for specific information;
- Reading: reading texts for specific information;

ACTIVITIES

TEACHER'S	STUDENTS'	LANGUAGE
<ul style="list-style-type: none"> ➤ Brainstorming; ➤ Short introduction on content and activities; ➤ Give worksheet; 	<ul style="list-style-type: none"> ➤ Vocabulary exercises; ➤ Listening and note-taking; ➤ Matching activity; ➤ Watching videos; 	<ul style="list-style-type: none"> ➤ matching words and definitions; ➤ matching pictures and definitions; ➤ listen and label a picture; ➤ fill in a table; ➤ label the stages of a process; ➤ fill in the gaps in a text;

FINAL PROJECT

- Planimetry of a building site – Oral Report;

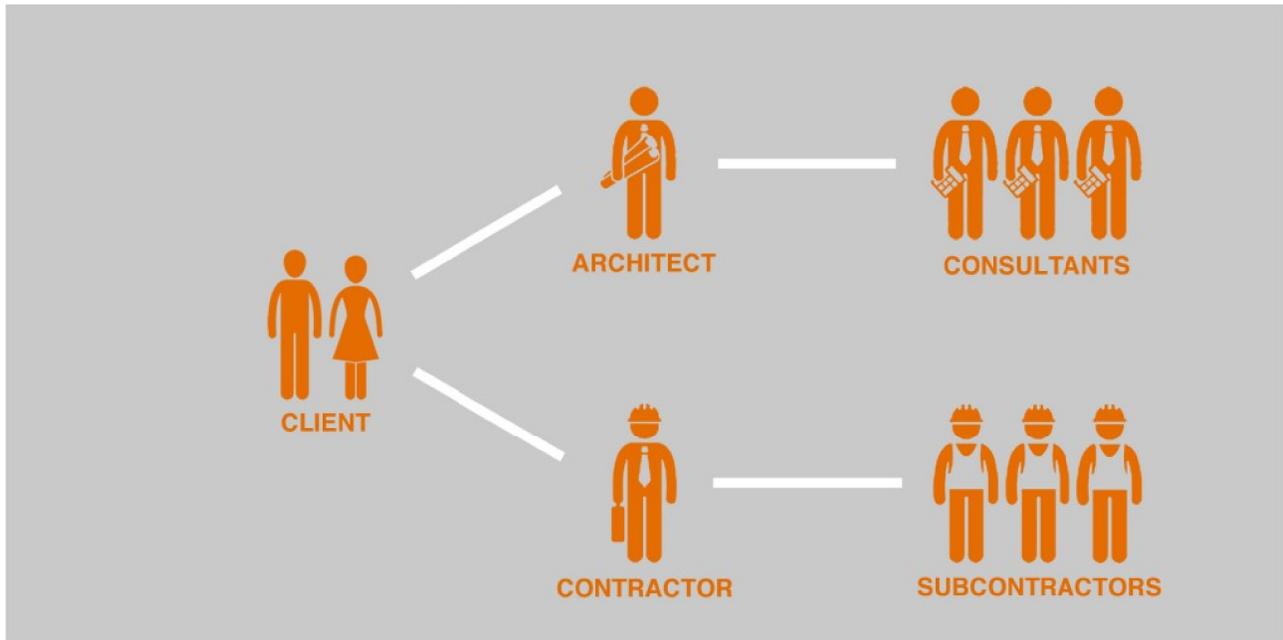
➤	Video (Use web or original materials)		
➤	Rendering of an excavation site (Autocad)		
ASSESSMENT CRITERIA			
SUMMATIVE		FORMATIVE	
➤	Content mastery;	➤	Participation;
➤	Communicative skills;	➤	Effort;
➤	communicative competence	➤	Collaborative Engagement;
		➤	Confidence
ASSESSMENT TASKS			
➤	Multiple choice;		
➤	Short oral presentation;		
➤	Reading comprehension		
ATTACHED DOCUMENTS			
1.	https://youtu.be/1h9U7VrVbTY		
2.	Excavation process (att.1)		
3.	Worksheet 1 (att.2)		
4.	Quesiti (att.3a)		
5.	Soluzione quesiti (att.3b)		
6.	Assessment grid ppt (att.4)		
7.	Assessment grid oral report (att.5)		
8.	Students' feedback (att.6)		

WORKSHEET 1

SEARCH THE WEB TO FIND THE DEFINITIONS OF THE WORDS ON THE LEFT COLUMN

WORDS	DEFINITIONS
1. CLIENT	
2. ARCHITECTURAL DESIGN	
3. BUILDING MANAGER	
4. SITE MANAGER	
5. SAFETY COORDINATOR AT THE EXECUTIVE STAGE	
6. SAFETY COORDINATOR AT THE DESIGN STAGE	
7. CONTRACTOR	
8. SUBCONTRACTOR	

Check this website for further infos <http://www.espressoenglish.net/english-vocabulary-words-for-construction/>



2. Write short sentences to explain the scheme below

WORKSHEET 2

FILL IN THE TEXT WITH THE WORDS IN THE BOXES

COORDINATOR, PLAN, CONSTRUCTION, EXECUTIVE

PSC

The _____ for Safety and Coordination is specific for any temporary or mobile _____ site and has to be prepared by Safety Coordinator in the Design stage (CSP) and continuously adjusted by the Safety _____ at _____.

POS

PLAN, CSE, HEAD, COMPANY

The Operational Safety Plan has to be arranged by the _____ of the firm and forwarded to the Safety Coordinator stage that has to _____ the PSC (if the _____ has been chosen before starting the work) or to the _____ (if the company starts when the works are underway).

WORK FILE

DEVELOPED, CYCLE, MEASURES, TOOL

The _____ that has to be used to show all safety _____ of the building that have to be taken, to be upgraded and _____ over the life _____ of bulding.

QUESITI MODULO 1 quinta CLIL

7. L'operatore alla macchina operatrice deve sempre indossare i dispositivi di protezione individuale.

V F

8. E' necessario che l'operaio soste nel raggio di azione delle macchine operatrici per meglio gestirle .

V F

QUESITI MODULO 1 quinta CLIL

9. L'operatore alla macchina operatrice deve sempre indossare i dispositivi di protezione individuale.

V F

10. E' necessario che l'operaio soste nel raggio di azione delle macchine operatrici per meglio gestirle.

V F

ASSESSMENT GRIDS PPT

Scores	Content and presentation Descriptors	Accuracy Descriptors
1 unsatisfactory	The presented texts chosen are not relevant to the topic, there are texts which show no sign of thoughtful choice, covering the whole slide copied from the Internet. Student just reads the text, is unable to answer	Student's performance is just reading the text with pronunciation mistakes which disturb understanding of the presentation
2 satisfactory	audience's questions about the theme. The material chosen and created is not logically ordered, the main points may be left out. Though the presentation gives some relevant information about the topic. The student mostly reads the text from the screen but is able to answer the	Student has mistakes in pronunciation; the text on the screen contains spelling mistakes. The structure of sentences may be wrong. The student does not understand some of audience's questions.
3 good	Audience's questions. The material chosen for the presentation is relevant to the topic, is logically organized, the main points and glossary pointed out. The student has a rather good command of the material, is able to answer the audience's questions, though at least some questions may cause a problem	There occur some pronunciation mistakes (1-3) in new notions. The text on the screen contains no mistakes, except for the glossary in which some words are given in the plural or past forms. The student understands the questions and is able to answer them mostly grammatically correctly.

<p>4 excellent</p>	<p>Student has used several sources for his presentation. The material is logically sequenced, the main points are highlighted. The glossary is chosen relevant to the topic. The design and visuals in slides are thought fully chosen. The student shows a complete and thorough knowledge of the theme, is able to answer audience's and teacher's questions, has prepared tasks for peers</p>	<p>Student has a good command of pronunciation. The text of the presentation does not contain any faults. The glossary and questions provided for audience do not contain mistakes. The student understands questions and gives expanded answers to them showing a good command of lexical repertoire relevant to the topic.</p>
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ASSESSMENT GRIDS

<p>Scores</p>	<p>Content and presentation Descriptors</p>	<p>Accuracy Descriptors</p>
<p>1 unsatisfactory</p>	<p>The presented texts chosen are not relevant to the topic, there are texts which show no sign of thoughtful choice, covering the whole slide copied from the Internet. Student just reads the text, is unable to answer</p>	<p>Student's performance is just reading the text with pronunciation mistakes which disturb understanding of the presentation</p>
<p>2 satisfactory</p>	<p>audience's questions about the theme. The material chosen and created is not logically ordered, the main points may be left out. Though the presentation gives some relevant information about the topic. The student mostly reads the text from the screen but is able to answer the</p>	<p>Student has mistakes in pronunciation; the text on the screen contains spelling mistakes. The structure of sentences may be wrong. The student does not understand some of audience's questions.</p>
<p>3 good</p>	<p>Audience's questions. The material chosen for the presentation is relevant to the topic, is logically organized, the main points and glossary pointed out. The student has a rather good command of the material, is able to answer the audience's questions, though at least some questions may cause a problem</p>	<p>There occur some pronunciation mistakes (1-3) in new notions. The text on the screen contains no mistakes, except for the glossary in which some words are given in the plural or past forms. The student understands the questions and is able to answer them mostly grammatically correctly.</p>

STUDENT'S NAME					
CLASS					
L2:					
SUBJECT					
		General issues			
MY EVALUATION		1 lacking	2 adequate	3 good	4 excellent
a.	Evaluation of the lesson as a whole				
b.	Content acquisition				
c.	Concepts development				
d.	Involvement in communication				
e.	Use of L2				
f.	Problem-solving activities				
g.	Individual behaviour				
h.	Behaviour in the group				
4 excellent	Student has used several sources for his presentation. The material is logically sequenced, the main points are highlighted. The glossary is chosen relevant to the topic. The design and visuals in slides are thought fully chosen. The student shows a complete and thorough knowledge of the theme, is able to answer audience's and teacher's questions, has prepared tasks for peers	Student has a good command of pronunciation. The text of the presentation does not contain any faults. The glossary and questions provided for audience do not contain mistakes. The student understands questions and gives expanded answers to them showing a good command of lexical repertoire relevant to the topic.			

Self-evaluation student grid

Specific issues:

The strategies used and how often:	Always or very often	Often	Sometimes	Seldom/ never
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a. I listened to the teacher's explanations				
b. I answered the teacher's questions.				
c. I answered my mates' questions.				
d. I used the examples presented by the teacher.				
e. I repeated verbally what I had previously heard, read or written.				
f. I tried to express orally, in my own words what I had heard, read or written.				
g. I used images, grids or graphs as a stimulus to speaking.				
h. others				

When I speak in a foreign language I consider important:	Very important	Important	Partially important	Not important
a. the correct pronunciation of words				
b. the ability to improvise				
c. knowledge of vocabulary				
d. knowledge of the contents				
e. the use of facial expressions, gestures and body movements				

f. grammatical correctness				
g. clarity of exposition				
h. the ability to reformulate				
i. check that the others understand me when I speak				
j. others:				
The problems I had:	Always or very often	Often	Sometimes	Seldom/ never
a. I did not know grammar in the foreign language.				
b. I did not know enough vocabulary in the foreign language.				
c. I did not know the contents of the non-linguistic subject				
d. I did not understand the teacher's questions.				
e. I was not interested in the non-linguistic subject.				
f. Others:				
g. clarity of exposition				
h. the ability to reformulate				
i. check that the others understand me when I speak				
j. others:				

CLIL MODULE PLANNER

CLIL SUBJECT : BUILDING SITE SAFETY – BUILDING SITE MANAGEMENT
CLIL LANGUAGE : ENGLISH
MODULE TITLE : <i>SAFETY ISN'T A HOBBY, IT'S LIFE!</i>
TEACHERS :

CLASS : 5TE
NUMBER OF LESSONS : 10 of 60minutes each
PRIOR KNOWLEDGE
<ul style="list-style-type: none"> ➤ <i>Knowledge of the fundamental aspects of the Italian law concerning building site safety;</i> ➤ <i>Knowledge of the specific lexis (L1)</i> ➤ <i>Knowledge of the main aspects of the building site management;</i>
CONTENT OBJECTIVES
<p><i>by the end of the module the students will be able to...</i></p> <ul style="list-style-type: none"> ➤ talk about the main legislation issues on safety; ➤ make up a correct safety plan; ➤ elaborate a OSP (Operational Safety Plan) ➤ implement good procedures preventing accidents,
LANGUAGE OBJECTIVES
<p><i>by the end of the module the students will be able to...</i></p> <ul style="list-style-type: none"> ➤ Use the vocabulary related to safety, health, building sites; ➤ Talk about safety topics
RESOURCES & MATERIALS
<ul style="list-style-type: none"> ➤ Slides; ➤ Websites; ➤ Worksheets; ➤ Videos; ➤ Computer;
SKILLS
<ul style="list-style-type: none"> ➤ Making connections and comparisons; ➤ Analyzing; ➤ Giving reasons;

➤	Reporting;		
➤	Collaborative work;		
LANGUAGE SKILLS			
➤	Speaking: talking about building site safety making comparisons between different body of laws;		
➤	Writing: writing sentences about it is necessary to work safely;		
➤	Listening: listening and notes taking for specific information;		
➤	Reading: reading texts for specific information		
ACTIVITIES <i>(Attività)</i>			
TEACHER'S		STUDENTS'	LANGUAGE
➤ Brainstorming;		➤ Vocabulary	➤ matching words
➤ Short introduction on content and activities;		➤ guessing;	➤ and definitions;
➤ Give worksheet		➤ Listening and note-taking;	➤ matching pictures and definitions;
		➤ Matching activity;	➤ listen and label a picture;
		➤ Watching a video	➤ fill in a table;
			➤ label the stages of a process;
			➤ fill in the gaps in a text
FINAL PROJECT			
➤	<i>Ppt presentation (group or cooperative work)</i>		
ASSESSMENT CRITERIA			
SUMMATIVE		FORMATIVE	
➤	Content mastery;	➤	Participation;
➤	Communicative skills;	➤	Effort;
➤	communicative competence;	➤	Collaborative Engagement;
		➤	Confidence;

ASSESSMENT TASKS <i>(Attività di verifica)</i>	
➤	Multiple choice;
➤	Short oral presentation (flipped classroom report);
ATTACHED DOCUMENTS	
1.	Safety ppt presentation (att.1)
2.	Worksheet 1 (att.2)
3.	worksheet 2 (att.3)
4.	Questions (att.4a)
5.	Questions answers (att.4b)
6.	Assessment grid ppt (att.5)
7.	Assessment grid oral report (att.6)
8.	Students' feedback grid (att.7)

CLIL MODULE PLANNER
(Pianificazione modulo CLIL)

CLIL SUBJECT : BUILDING SITE SAFETY – BUILDIND SITE MANAGEMENT
CLIL LANGUAGE : ENGLISH
MODULE TITLE : SAFETY ISN'T A HOBBY, IT'S LIFE!
TEACHER/S : Prof.ssa ROSA RICCONI
CLASS : VA TE
NUMBER OF LESSONS : 10 of 60minutes each
PRIOR KNOWLEDGE
➤ <i>Knowledge of the fundamental aspects of the Italian law concerning building site safety;</i>
➤ <i>Knowledge of the specific lexis (L1)</i>

- *Knowledge of the main aspects of the building site management;*

CONTENT OBJECTIVES

by the end of the module the students will be able to...

- talk about the main legislation issues on safety;
- make up a correct safety plan;
- elaborate a OSP (Operational Safety Plan)
- implement good procedures preventing accidents,

LANGUAGE OBJECTIVES

by the end of the module the students will be able to...

- Use the vocabulary related to safety, health, building sites;
- Talk about safety topics

RESOURCES & MATERIALS

- Slides;
- Websites;
- Worksheets;
- Videos;
- Computer;

ex. slides, videos, websites, worksheets, texts accompanied by illustrations, computer, podcast, smart board,

SKILLS *(Abilità)*

- Making connections and comparisons;
- Analyzing;
- Giving reasons;
- Reporting;
- Collaborative work;

ex. reasoning, applying, giving reasons, making connections, analyzing, reporting, creating, digital competence, collaborative work,

(ex. abilità interpersonali, competenza digitale, capacità di fare collegamenti/analizzare/riferire/spiegare....)

LANGUAGE SKILLS *(Abilità linguistiche)*

- Speaking: talking about building site safety making comparisons between different body of laws;
- Writing: writing sentences about it is necessary to work safely;
- Listening: listening and notes taking for specific information;
- Reading: reading texts for specific information

<p><i>ex. key vocabulary, making /answering questions, comparing and contrasting, describing a process, presenting evidence, classifying, discussing, ...</i> <i>(ex. lessico chiave, fare/rispondere domande, confrontare, classificare, descrivere un processo, discutere....)</i></p>		
<p>ACTIVITIES <i>(Attività)</i></p>		
<p>TEACHER'S</p>	<p>STUDENTS'</p>	<p>LANGUAGE</p>
<ul style="list-style-type: none"> ➤ Brainstorming; ➤ Short introduction on content and activities; ➤ Give worksheet; <p><i>ex. brainstorming, short introduction on content, worksheet on vocabulary,</i> <i>(ex. breve presentazione dell'argomento, somministrazione di fogli di lavoro sul lessico, ...)</i></p>	<ul style="list-style-type: none"> ➤ Vocabulary guessing; ➤ Listening and note-taking; ➤ Matching activity; ➤ Watching a video; ➤ <p><i>ex. matching activity, watching a video, group-work, ...</i> <i>(ex. esercizio di abbinamento, visione di un video, lavoro di gruppo, ..)</i></p>	<ul style="list-style-type: none"> ➤ matching words and definitions; ➤ matching pictures and definitions; ➤ listen and label a picture; ➤ fill in a table; ➤ label the stages of a process; ➤ fill in the gaps in a text; ➤ <p><i>ex. matching words and definitions, listen and label a picture/ fill in a table/label the stages of a process/fill in the gaps in a text, order paragraphs,</i> <i>(ex. abbinamento di termini e definizioni, ascoltare ed etichettare immagini/fasi di un processo, ascoltare e completare una tabella/spazi vuoti di un testo...)</i></p>
<p>FINAL PROJECT <i>(Progetto finale)</i></p>		
<ul style="list-style-type: none"> ➤ Ppt presentation (group or cooperative work) 		
<p>ASSESSMENT CRITERIA <i>(Criteri di verifica)</i></p>		
<p>SUMMATIVE <i>(Sommativa)</i></p>	<p>FORMATIVE <i>(Formativa)</i></p>	
<ul style="list-style-type: none"> ➤ Content mastery; ➤ Communicative skills; ➤ communicative competence; <p><i>ex. task performance, content mastery, communicative competence,</i> <i>(ex. risultati nelle varie attività, conoscenza dell'argomento,</i></p>	<ul style="list-style-type: none"> ➤ Participation; ➤ Effort; ➤ Collaborative Engagement; ➤ Confidence; <p><i>ex. participation, effort, collaborative engagement, confidence,</i></p>	

<i>abilità comunicativa, ...)</i>	<i>(ex. impegno, partecipazione, autonomia, abilità interpersonali, ...)</i>
ASSESSMENT TASKS <i>(Attività di verifica)</i>	
➤	Multiple choice;
➤	Short oral presentation (flipped classroom report);
<i>ex.progress test, objective tests (true/false,multiple choice,etc.),subjective tests(oral presentations,written compositions, ... (ex. test di progresso, vero/falso, a scelta multipla...; presentazioni orali/scritte...)</i>	
ATTACHED DOCUMENTS <i>(Allegati)</i>	
1.	Students' feedback grid
2.	Evaluation grid
3.	Worksheet 1
4.	worksheet 2
5.	final test (with answers)

Questions module 1_V CLIL

1. The operator of the vehicle must always wear personal protective equipment.

T F

2. It is necessary that every worker should be kept closeto areas of excavator operation.

T **F**

Questions module 1_V CLIL

3. The operator of the vehicle must always wear personal protective equipment.

T F

4. It is necessary that every worker should be kept closeto areas of excavator operation.

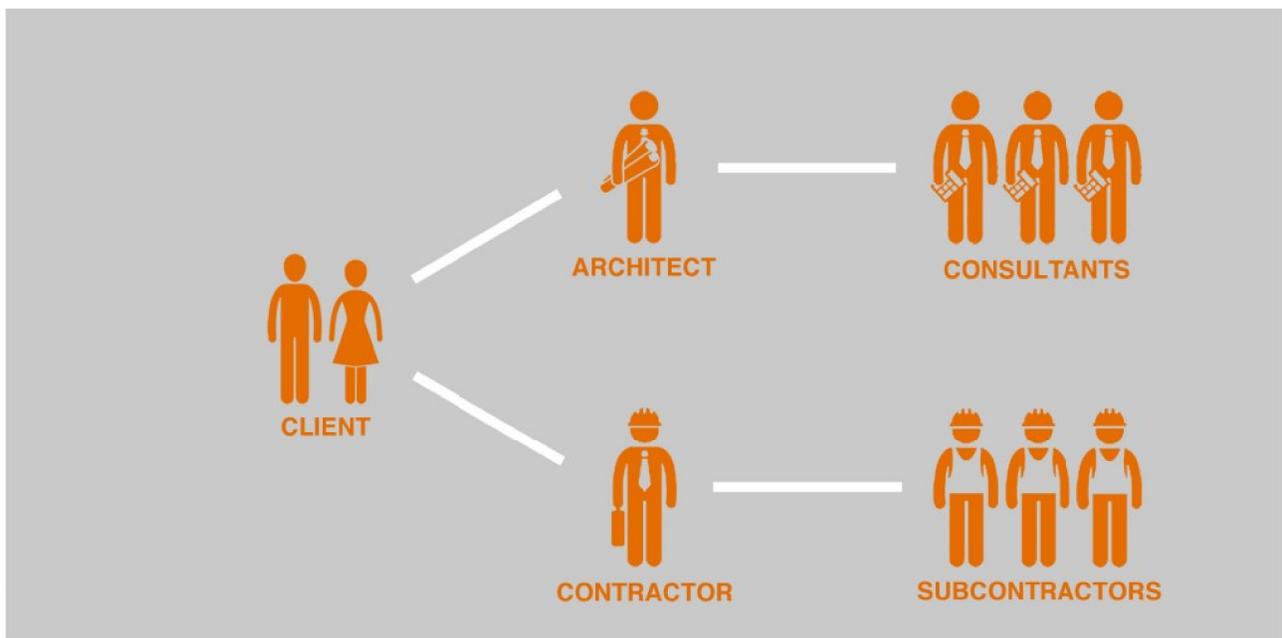
T F

WORKSHEET 1

SEARCH THE WEB TO FIND THE DEFINITIONS OF THE WORDS ON THE LEFT COLUMN

WORDS	DEFINITIONS
1. CLIENT	
2. ARCHITECTURAL DESIGN	
3. BUILDING MANAGER	
4. SITE MANAGER	
5. SAFETY COORDINATOR AT THE EXECUTIVE STAGE	
6. SAFETY COORDINATOR AT THE DESIGN STAGE	
7. CONTRACTOR	
8. SUBCONTRACTOR	

Check this website for further infos <http://www.espressoenglish.net/english-vocabulary-words-for-construction/>



2. Write short sentences to explain the scheme below

WORKSHEET 2

FILL IN THE TEXT WITH THE WORDS IN THE BOXES

COORDINATOR, PLAN, CONSTRUCTION, EXECUTIVE

PSC

The _____ for Safety and Coordination is specific for any temporary or mobile _____ site and has to be prepared by Safety Coordinator in the Design stage (CSP) and continuously adjusted by the Safety _____ at _____.

POS

PLAN, CSE, HEAD, COMPANY

The Operational Safety Plan has to be arranged by the _____ of the firm and forwarded to the Safety Coordinator stage that has to _____ the PSC (if the _____ has been chosen before starting the work) or to the _____ (if the company starts when the works are underway).

WORK FILE

DEVELOPED, CYCLE, MEASURES, TOOL

The _____ that has to be used to show all safety _____ of the building that have to be taken, to be upgraded and _____ over the life _____ of bulding.

CLIL MODULE PLANNER – VA TE

CLIL SUBJECT : BUILDING SITE SAFETY – BUILDING SITE MANAGEMENT
CLIL LANGUAGE : ENGLISH
MODULE TITLE : PREVENTING ACCIDENTS ON A BUILDING SITE
TEACHER: Prof.ssa ROSA RICCIONI
CLASS : V ATE
NUMBER OF LESSONS: <i>10 of 60' minutes each</i>
PRIOR KNOWLEDGE
<ul style="list-style-type: none"> ➤ <i>Knowledge of the fundamental aspects of the Italian law concerning building site safety;</i> ➤ <i>Knowledge of the specific lexis (L1)</i> ➤ <i>knowledge of the main aspects of the building site management;</i>
CONTENT OBJECTIVES
<ul style="list-style-type: none"> ➤ To recognize the importance of safety rules in order to prevent accidents; ➤ To compare UK and Italian laws on building site safety; ➤ To create a presentation, a video or a planimetry of a building site;
<i>by the end of the module the students will be able to...</i>
<ul style="list-style-type: none"> ➤ To learn vocabulary about building sites and safety issues; ➤ To use the modals Should/ Ought to/ Must
LANGUAGE OBJECTIVES
<i>by the end of the module the students will be able to...</i>

- Use the modals **should, ought to, must, comparatives**;
- Use the vocabulary related to safety, health, building sites;
- Talk about safety topics

RESOURCES & MATERIALS

- Slides;
- Websites;
- Worksheets;
- Videos;
- Computer;

SKILLS

- Making connections and comparisons;
- Analyzing;
- Giving reasons;
- Reporting;
- Collaborative work;

LANGUAGE SKILLS

- Speaking: talking about building site safety making comparisons between different body of laws;
- Writing: writing sentences about it is necessary to work safely;
- Listening: listening and notes taking for specific information;
- Reading: reading texts for specific information;

ACTIVITIES

TEACHER'S	STUDENTS'	LANGUAGE
<ul style="list-style-type: none"> ➤ Brainstorming; ➤ Short introduction on content and activities; ➤ Give worksheet; 	<ul style="list-style-type: none"> ➤ Vocabulary guessing; ➤ Listening and note-taking; ➤ Matching activity; ➤ Watching a video; 	<ul style="list-style-type: none"> ➤ <i>matching words and definitions;</i> ➤ <i>matching pictures and definitions;</i> ➤ <i>listen and label a picture;</i> ➤ <i>fill in a table;</i> ➤ <i>label the stages of a process;</i> ➤ <i>fill in the gaps in a text;</i>

FINAL PROJECT

- *Planimetry of a building site – Oral Report;*
- *Video (Use web or original materials)*

ASSESSMENT CRITERIA <i>(Criteri di verifica)</i>	
SUMMATIVE <i>(Sommativa)</i>	FORMATIVE <i>(Formativa)</i>
<ul style="list-style-type: none"> ➤ Content mastery; ➤ Communicative skills; ➤ communicative competence; 	<ul style="list-style-type: none"> ➤ Participation; ➤ Effort; ➤ Collaborative Engagement; ➤ Confidence;
ASSESSMENT TASKS	
<ul style="list-style-type: none"> ➤ Multiple choice; ➤ Short oral presentation; ➤ Reading comprehension; ➤ Rephrasing (see worksheet 2); 	
ATTACHED DOCUMENTS	
<ol style="list-style-type: none"> 1. Worksheet 1 2. Worksheet 2 3. Final test 4. Evaluation grid 5. Students Feedback questionnaire 	

QUESITI MODULO 2_Quinta CLIL

1. The Safety Officer must draw up a detailed plan for the site management.

T F

1. The manager of the company must draw up a safety plan.

T F

QUESITI MODULO 2_Quinta CLIL

1. The Safety Officer must draw up a detailed plan for the site management.

T **F**

1. The manager of the company must draw up a safety plan.

T F

CLIL MODULE PLANNER – VA TE_3

CLIL SUBJECT : BUILDING SITE SAFETY – BUILDIND SITE MANAGEMENT
CLIL LANGUAGE : ENGLISH
MODULE TITLE : Waste management and recycling
TEACHER: Prof.ssa ROSA RICCIONI
CLASS : V ATE
NUMBER OF LESSONS: <i>10 of 60' minutes each</i>
PRIOR KNOWLEDGE <ul style="list-style-type: none">➤ <i>Knowledge of the fundamental aspects of the Italian law concerning waste management;</i>➤ <i>Knowledge of the specific lexis (L1)</i>➤ <i>knowledge of the main aspects of the building site management;</i>
CONTENT OBJECTIVES <ul style="list-style-type: none">➤ To recognize the importance of environment conservation;➤ To compare UK and Italian laws on building site waste management;➤ To write a report or shoot a video on waste management on the building site;
<i>by the end of the module the students will be able to...</i> <ul style="list-style-type: none">➤ To learn vocabulary about different types of waste
LANGUAGE OBJECTIVES
<i>by the end of the module the students will be able to...</i> <ul style="list-style-type: none">➤ Use the vocabulary related to safety, health and waste management building sites;➤ Talk about safety topics and waste management rules;
RESOURCES & MATERIALS
<ul style="list-style-type: none">➤ Slides;➤ Websites;➤ Worksheets;➤ Videos;➤ Computer;
SKILLS

<ul style="list-style-type: none"> ➤ Making connections and comparisons; ➤ Analyzing; ➤ Giving reasons; ➤ Reporting; ➤ Collaborative work; 		
LANGUAGE SKILLS		
<ul style="list-style-type: none"> ➤ Speaking: talking about the essential aspects on the waste management legislation; ➤ Writing: writing sentences about recycling, reusing and getting rid of building site waste; ➤ Listening: listening and notes taking for specific information; ➤ Reading: reading texts for specific information; 		
ACTIVITIES		
TEACHER'S	STUDENTS'	LANGUAGE
<ul style="list-style-type: none"> ➤ Brainstorming; ➤ Short introduction on content and activities; ➤ Give worksheet; 	<ul style="list-style-type: none"> ➤ Vocabulary guessing; ➤ Listening and note-taking; ➤ Matching activity; ➤ Watching a video; 	<ul style="list-style-type: none"> ➤ <i>matching words and definitions;</i> ➤ <i>matching pictures and definitions;</i> ➤ <i>listen and label a picture;</i> ➤ <i>fill in a table;</i> ➤ <i>label the stages of a process;</i> ➤ <i>fill in the gaps in a text;</i>
FINAL PROJECT		
<ul style="list-style-type: none"> ➤ <i>Relazione tecnica sullo smaltimento e riciclo dei materiali derivanti dalle demolizioni;</i> ➤ <i>Video (Use web or original materials)</i> 		
ASSESSMENT CRITERIA <i>(Criteri di verifica)</i>		
SUMMATIVE <i>(Sommativa)</i>	FORMATIVE <i>(Formativa)</i>	
<ul style="list-style-type: none"> ➤ Content mastery; ➤ Communicative skills; ➤ communicative competence; 	<ul style="list-style-type: none"> ➤ Participation; ➤ Effort; ➤ Collaborative Engagement; ➤ Confidence; 	
ASSESSMENT TASKS		
<ul style="list-style-type: none"> ➤ Multiple choice; ➤ Short oral presentation; ➤ Reading comprehension; ➤ Rephrasing (see worksheet 2); 		
ATTACHED DOCUMENTS		
1. Worksheet 1		

- | | |
|----|---------------------------------|
| 2. | Worksheet 2 |
| 3. | Worksheet 3 |
| 4. | Final test |
| 5. | Evaluation grid |
| 6. | Students Feedback questionnaire |

QUESITI MODULO 3_Quinta CLIL

5. All the material must be reused

V F

6. Every asbestos manufact must be removed by appropriately trained companies

V F

QUESITI MODULO 3_Quinta CLIL

7. All the material must be reused

V **F**

8. Every asbestos manufact must be removed by appropriately trained companies

V F

CLIL MODULE PLANNER – VA TE 4

CLIL SUBJECT : BUILDING SITE SAFETY – BUILDIND SITE MANAGEMENT
CLIL LANGUAGE : ENGLISH
MODULE TITLE : collective protection devices
TEACHER: Prof.ssa ROSA RICCONI
CLASS : V ATE

NUMBER OF LESSONS: *10 of 60' minutes each*

PRIOR KNOWLEDGE

- *Knowledge of the fundamental aspects of the Italian law concerning building site safety rules*
- *Knowledge of the specific lexis (L1)*
- *knowledge of the main aspects of the building site management;*

CONTENT OBJECTIVES

- To recognize the importance of accidents prevention and the use of collective protection devices;
- To compare UK and Italian laws on building site safety;
- To write a short report or make up a Ppt presentation on safety rules;

by the end of the module the students will be able to...

- To learn vocabulary about the use of collective protection use;

LANGUAGE OBJECTIVES

by the end of the module the students will be able to...

- Use the modals **should, ought to, must, comparatives;**
- Use the vocabulary related to safety, health, building sites;
- Talk about safety topics

RESOURCES & MATERIALS

- Slides;
- Websites;
- Worksheets;
- Videos;
- Computer;

SKILLS

- Making connections and comparisons;
- Analyzing;
- Giving reasons;
- Reporting;
- Collaborative work;

LANGUAGE SKILLS

- Speaking: talking about the essential aspects of the building site safety;
- Writing: writing sentences about the use of collective protection devices;
- Listening: listening and notes taking for specific information;
- Reading: reading texts for specific information;

ACTIVITIES		
TEACHER'S	STUDENTS'	LANGUAGE
<ul style="list-style-type: none"> ➤ Brainstorming; ➤ Short introduction on content and activities; ➤ Give worksheet; 	<ul style="list-style-type: none"> ➤ Vocabulary guessing; ➤ Listening and note-taking; ➤ Matching activity; ➤ Watching a video; 	<ul style="list-style-type: none"> ➤ <i>matching words and definitions;</i> ➤ <i>matching pictures and definitions;</i> ➤ <i>listen and label a picture;</i> ➤ <i>fill in a table;</i> ➤ <i>label the stages of a process;</i> ➤ <i>fill in the gaps in a text;</i>
FINAL PROJECT		
<ul style="list-style-type: none"> ➤ <i>elaborazione di una planimetria con indicazione del posizionamento dei vari dispositivi di protezione</i> ➤ <i>Video (Use web or original materials)</i> 		
ASSESSMENT CRITERIA (Criteri di verifica)		
SUMMATIVE (Sommativa)	FORMATIVE (Formativa)	
<ul style="list-style-type: none"> ➤ Content mastery; ➤ Communicative skills; ➤ communicative competence; 	<ul style="list-style-type: none"> ➤ Participation; ➤ Effort; ➤ Collaborative Engagement; ➤ Confidence; 	
ASSESSMENT TASKS		
<ul style="list-style-type: none"> ➤ Multiple choice; ➤ Short oral presentation; ➤ Reading comprehension; ➤ Rephrasing (see worksheet 2); 		
ATTACHED DOCUMENTS		
<ol style="list-style-type: none"> 1. Worksheet 1 2. Worksheet 2 3. Worksheet 3 4. Final test 5. Evaluation grid 6. Students Feedback questionnaire 		

QUESITI MODULO 4_Quinta CLIL

9. It is necessary to wear a helmet and strapping in the building site.

V F

10. Any difference in level must be adequately signalled and protected

V F

QUESITI MODULO 4_Quinta CLIL

11. It is necessary to wear a helmet and strapping in the building site.

V **F**

12. Any difference in level must be adequately signalled and protected

V **F**

ASSESEMENT GRIDS PPT

Scores	Content and presentation Descriptors	Accuracy Descriptors
1 unsatisfactory	The presented texts chosen are not relevant to the topic, there are texts which show no sign of thoughtful choice, covering the whole slide copied from the Internet. Student just reads the text, is unable to answer	Student's performance is just reading the text with pronunciation mistakes which disturb understanding of the presentation
2 satisfactory	audience's questions about the theme. The material chosen and created is not logically ordered, the main points may be left out. Though the presentation gives some relevant information about the topic. The student mostly reads the text from the screen but is able to answer the	Student has mistakes in pronunciation; the text on the screen contains spelling mistakes. The structure of sentences may be wrong. The student does not understand some of audience's questions.

<p>3 good</p>	<p>Audience's questions. The material chosen for the presentation is relevant to the topic, is logically organized, the main points and glossary pointed out. The student has a rather good command of the material, is able to answer the audience's questions, though at least some questions may cause a problem</p>	<p>There occur some pronunciation mistakes (1-3) in new notions. The text on the screen contains no mistakes, except for the glossary in which some words are given in the plural or past forms. The student understands the questions and is able to answer them mostly grammatically correctly.</p>
<p>4 excellent</p>	<p>Student has used several sources for his presentation. The material is logically sequenced, the main points are highlighted. The glossary is chosen relevant to the topic. The design and visuals in slides are thought fully chosen. The student shows a complete and thorough knowledge of the theme, is able to answer audience's and teacher's questions, has prepared tasks for peers</p>	<p>Student has a good command of pronunciation. The text of the presentation does not contain any faults. The glossary and questions provided for audience do not contain mistakes. The student understands questions and gives expanded answers to them showing a good command of lexical repertoire relevant to the topic.</p>

ASSESEMENT GRIDS

<p>Scores</p>	<p>Content and presentation Descriptors</p>	<p>Accuracy Descriptors</p>
<p>1 unsatisfactory</p>	<p>The presented texts chosen are not relevant to the topic, there are texts which show no sign of thoughtful choice, covering the whole slide copied from the Internet. Student just reads the text, is unable to answer</p>	<p>Student's performance is just reading the text with pronunciation mistakes which disturb understanding of the presentation</p>
<p>2 satisfactory</p>	<p>audience's questions about the theme. The material chosen and created is not logically ordered, the main points may be left out. Though the presentation gives some relevant information about the topic. The student mostly reads the text from the screen but is able to answer the</p>	<p>Student has mistakes in pronunciation; the text on the screen contains spelling mistakes. The structure of sentences may be wrong. The student does not understand some of audience's questions.</p>

<p>3 good</p>	<p>Audience's questions. The material chosen for the presentation is relevant to the topic, is logically organized, the main points and glossary pointed out. The student has a rather good command of the material, is able to answer the audience's questions, though at least some questions may cause a problem</p>	<p>There occur some pronunciation mistakes (1-3) in new notions. The text on the screen contains no mistakes, except for the glossary in which some words are given in the plural or past forms. The student understands the questions and is able to answer them mostly grammatically correctly.</p>
<p>4 excellent</p>	<p>Student has used several sources for his presentation. The material is logically sequenced, the main points are highlighted. The glossary is chosen relevant to the topic. The design and visuals in slides are thought fully chosen. The student shows a complete and thorough knowledge of the theme, is able to answer audience's and teacher's questions, has prepared tasks for peers</p>	<p>Student has a good command of pronunciation. The text of the presentation does not contain any faults. The glossary and questions provided for audience do not contain mistakes. The student understands questions and gives expanded answers to them showing a good command of lexical repertoire relevant to the topic.</p>

Self-evaluation student grid

STUDENT'S NAME				
CLASS				
L2:				
SUBJECT				
	General issues			
MY EVALUATION	1 lackin	2 adequate	3 good	4 excellent
a. Evaluation of the lesson as a whole				
b. Content acquisition				
c. Concepts development				
d. Involvement in communication				
e. Use of L2				
f. Problem-solving activities				
g. Individual behaviour				
h. Behaviour in the group				

Specific issues:

The strategies used and how often:	Always or very often	Often	Sometimes	Seldom/ never
a. I listened to the teacher's explanations				
b. I answered the teacher's questions.				
c. I answered my mates' questions.				
d. I used the examples presented by the teacher.				
e. I repeated verbally what I had previously heard, read or written.				

f. I tried to express orally, in my own words what I had heard, read or written.				
g. I used images, grids or graphs as a stimulus to speaking.				
h. others				

When I speak in a foreign language I consider important:	Very important	Important	Partially important	Not important
a. the correct pronunciation of words				
b. the ability to improvise				
c. knowledge of vocabulary				
d. knowledge of the contents				
e. the use of facial expressions, gestures and body movements				
f. grammatical correctness				
g. clarity of exposition				
h. the ability to reformulate				
i. check that the others understand me when I speak				
j. others:				
The problems I had:	Always or very often	Often	Sometimes	Seldom/ never
a. I did not know grammar in the foreign language.				
b. I did not know enough vocabulary in the foreign language.				
c. I did not know the contents of the non-linguistic subject				

d. I did not understand the teacher's questions.				
e. I was not interested in the non-linguistic subject.				
f. Others:				
g. clarity of exposition				
h. the ability to reformulate				
i. check that the others understand me when I speak				
j. others:				