ENGLISH CLASS FOR MATHEMATICS - SEMESTER 6

CC1 (coeff.1) Written test	CC2 (coeff.1) Speaking test

Class #	Content
1	• Presentation of the semester • Making questions • Questioning the world
2	• Reading and talking about science • Understanding and making new words
3	• Science and misconceptions • Idioms and science
4	• Reported speech • Speaking
5	• Cloning • Expressing will and orders
6	• Nuclear power plants • Comparing
7	• CC1: written test
8	• CC2: individual speaking test
9	• CC2: individual speaking test

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CLASS 1: MAKING QUESTIONS AND QUESTIONING THE WORLD

1. Presentation of the semester

2. Making questions – recap + practice

⇨ WH-questions: Interrogative word + Auxiliary + S + Verb?

Question word	Translation
	Que, quoi, qu'est-ce que
	Quand
	Où
	Quel(s), quelle(s)
	Qui
	À qui (possession)
	Pourquoi

3. Questions with « how »

Question word	Translation
	Quelle quantité
	Combien (nombre)
	À quelle fréquence / tous les combien
	Combien de temps
	Il y a combien de temps
	Quel âge
	Quelle taille (volume)
	Quelle taille (hauteur)
	À quelle distance

4. Practice. Questions with «how»

a. He needs half a pound of flour. ➔

b. He discovered penicillin 100 years ago. ➔

c. He bought five books. ➔

d. She will be 30 next year. ➔

e. He has to work once a week. ➔

f. They spent five days in London. ➔

g. He is 5 foot 3. ➔

h. She has worked with us for 2 years. ➔

5. Indirect questions

⇨ Indirect questioning: Question phrase + QW + S + Verb + punctuation

Recap on direct and indirect questions

Direct questions	Indirect questions
Word order	Word order
QW aux S V	Indirect form QW S V
Examples	Examples
1. What does she want to study?	1. I want to know what she wants to study.
2. Where is the teacher?	2. I wonder where the teacher is.
3. When did the Big Bang exactly occur?	3. Scientists still wonder when the Big Bang exactly occurred.
4. Why do you like science so much?	4. Do you mind telling me why you love science so much?
5. Is mathematics abstract thinking?	5. I do not know whether mathematics is abstract thinking or not. ➔ "whether" when there are two alternatives

6. Practice. Find the questions to the following sentences.

a. I have $2,000 on my bank account.

b. His kid watches television every day. What a bad habit!

c. He read the newspaper.

d. I have studied Spanish for 3 years.

e. These are Mr Haley's books.

f. The dog is barking at the postman.

7. Indirect questions - practice

g. Where is our next class?

h. When can go home?

i. What does the teacher want?

8. Questioning the world. Group work

a. Questions scientists still do not have answers to:

Example: What happened in the early universe?

Now list five questions science still doesn't have answers to:

1.

2.

3.

4.

5.

b. Questions children or non-scientists may not have the answers to:

Example: How much does the earth weigh?

Now list five questions children or non-scientists may have:

1.

2.

3.

4.

5.

(If time allows, answer the questions)

CLASS 2: READING AND TALKING ABOUT SCIENCE

Part 1.Reading and talking about science. Expectations:

- Dans votre grand oral, vous donnerez une réponse argumentée
- Votre opinion sera basée sur des expériences et articles scientifiques étudiés chez vous

- Votre oral pourra être suivi de quelques questions liées au thème ou à votre discipline

Part 2. Understanding new words in articles and in videos

2a. How does English make new words?

Match each term below with a method of formation

Word	Method of Formation
1. Netflix 2. laser 3. brunch 4. exam 5. racist 6. Post-it 7. ping-pong 8. igloo 9. atomic 10. bungalow 11. biohazard 12. photosynthesis 13. to chair 14. K-pop 15. kleenex 16. workoholic 17. yuppy 18. blog	a. blending b. using part of a word c. forming a word from the letters of a phrase d. derivation (adding a prefix or a suffix) e. conversion (changing the way a word is used - e.g. a verb becomes a noun) f. composition (joining two words) g. words made with rhyming pairs h. loaning (taking a word from another language) i. using brand names

2b. Blending: Find what words were mixed together to form another word

1. electrocute:
2. smog:
3. Oxbridge:
4. motel:
5. mansplaining:

6. shrinkflation:

2c. Derivation:

Derivation consists in adding a prefix or a suffix to a root to make a new word.

Adding prefixes - example

hyper	tonic
iso	
hypo	

- having equal measurements = _____
- the fact of having your blood sugar level lower than the standard range = _____

endo	therm	al
exo		
geo		
hydro		ic
meso		
iso		

2d. Conversion with suffixes

Verb	Noun forming suffix	Noun
diffuse	-ion	
mix	-ure	
measure	-ment	

analyse	-is	
survive	-al	
resist	-ance	
insulate	-or	

Adjective	Noun forming suffix	Noun
soluble	-ity	
frequent	-cy	
soft	-ness	

2e. Exercise on derivation. Complete the following sentences by adding prefixes or and suffixes to the words in brackets

a. June Huh was _____ when he realized he had been awarded the Fields Medal. (speech)

b. Realizing the _____of the situation, they gave up. (hope)

c. The student felt _____after behaving _____ (comfortable-normal)

d. Hold this test tube _____ !(care)

e. The assistant pretended to _____my instructions. (understand)

f. The rainforest is a beautiful but _____place. (friend)

g. The bad weather _____ the students from going out. (courage)

Part 3. Relative clauses

a. That, which, whose, what, who and whom are the most common relative pronouns

- quick reminder in class

b. Exercise. Circle the correct answer.

1. This is the physicist …won the Nobel Prize last year.

a. who b. which c. whom d. whose

2. The goal of COVAX is to have 2 billion doses to distribute, ……. should be enough to help countries vaccinate 20% of their populations.

a. who b. which c. what d. that

3. Pfizer is a vaccine ….. relies on messenger RNA.

a. who b. that c. whose d. Ø

4. In my opinion, Einstein is the scientist ….. discoveries are the most impressive.

a. which b. whom c. whose d. that

5. The phenomenon …… I told you about last time is called Bismuth crystals

a. Ø b. whom c. whose d. what

6. The new lab assistant, with … we work, graduated last year.

a. which b. whom c. whose d. that

7. I heard you're interested in applying to Harvard, … surprised me.

a. what b. that c. of which d. which

8. His reaction was not… we expected.

a. what b. that c. that which d. which

9. The theory of evolution is a shortened form of the term “theory of evolution by natural selection,” ….. was proposed by Charles Darwin

a. what b. which c. Ø d. whose

4. Translate.

1. Une enzyme est une protéine produite par tous les organismes et qui se comporte comme un catalyseur.

2. Un catalyseur est une substance qui accélère les réactions chimiques sans subir de changement permanent.

3. Elon Musk, qui est le PDG de Tesla Motors, est maintenant milliardaire.

4. Il n’a pas pu finir l’expérience qu’il avait débutée un mois plus tôt.

5. Le théorème bien connu dont le professeur nous a parlé est le théorème de Pythagore.

6. Le scientifique que j’admire travaillait pour Scientific American.

5. Pronunciation: reminder. Read the words out loud.

●‥	·●·	‥●
Useful National Popular Comfortable	Important Expensive Tremendous Pandemic	Engineer Overwhelm Disagree

●‥‥	·●‥	‥●·
Definitely Criticism January	Impossible Apologize Exaggerate Technology Delivery	Scientific Information Controversial Universal

Class 3: SCIENCE AND MISCONCEPTIONS

1. Brainstorming: What are a stereotype and a misconception?

2. What are the clichés scientists may suffer of?

3. Lesson

- It is commonly believed that…
- It is wrongly said that…

- …. are/is said to…
- …are/is believed to…
- whereas
- while
- although, even though
- despite
- People may / might …

4. Writing. Make one sentence opposing clichés and reality by using words from #3
Example: French people are said to be rude but tourists usually change their minds after spending time in the country.
Your sentence:

5. Video. Big Bang Theory « pictionary, boys vs girls »
https://www.youtube.com/watch?v=C8lMW0MODFs&t=149s

Watch the video and list:

The clichés you see	The clichés you hear

6. Vocabulary. Find the English equivalents in the video.

1. Être déçu.e		2. un exploit, une réalisation	
3. à peine, guère		4. un désavantage évident	

5. du plasma quarks–gluons		6. de façon asymptotique	
7. basé.e sur l'observation		8. une réfutation	
9. evident.e		10. nourrir à la petite cuillère	
11. du vernis à ongles		12. polonais.e	
13. partager les torts			

7. Facts and myths

- Can you think of any examples of misconception in science?

Describe the past or current misconception in one sentence, and then write a small paragraph explaining the mistake.

Example #1:

➔ Spinach are said to contain a lot of iron.

➔The iron content of spinach was miscalculated by a German chemist when he misplaced a decimal point. While there are just 3.5 milligrams of iron in a hundred-gram serving of spinach, the accepted number became 35 milligrams because of his mistake.

https://www.youtube.com/watch?v=z5l864W4wrk (Popeye's son eating spinach 25 sec)

Example #2:

➔People used to think the Earth was flat.

➔Even though Plato wrote about a spherical Earth in the early 4th century BC, the Earth was believed to be flat for a long time afterwards.

Your example #1:

➔

➔

Your example #2:

➔

➔

8. Idioms. These idiomatic phrases come from science and technology. Match them to their meanings.

1. to blind someone with science	a rigorous or critical test of something
2. It's not rocket science!	to rest or relax in order to get back your energy
3. to recharge one's batteries	to confuse people by using technical language that they are not likely to understand
4. (at) the cutting edge	something that functions very well
5. Don't push my buttons!	(at) the forefront of progress in a particular area
6. light years ahead	is said to someone who is starting to annoy you
7. to be on the same wavelength	it is easy to understand, obvious
8. to get one's wires crossed	to misunderstand each other, especially when making arrangements
9. a well-oiled machine	you are a long way in front of others in terms of development, success, etc
10. an acid test	to have the same ideas and opinions about something

9. Grammar. Relative clauses with relative adverbs

a) The laboratory where experiments are conducted must be kept clean all the time.

b) The time when we should conduct the experiment has not been decided yet.

c) That Physics studies both universe and human being is the reason why I love it.

Each of the above sentences has a relative clause starting with a relative adverb:

⇨ _____ is used to modify nouns referring to a place

⇨ _____ is used to modify nouns referring to time. _____ follows the time notion such as day, week, month, year

⇨ _____ is used to modify the reason

"When" and where can be replaced with an appropriate preposition (in, at or on…) + which

Examples:

1. The time when we make the observations must be long enough.
2. The day when I started my new job was very impressive.
3. 1642 is the year when Isaac Newton was born.
4. The place where we do experiment is called a laboratory.
5. The room where lectures are given is called the lecture hall.

Rewrite the sentences using the structure preposition + which

1.
2.
3.
4.
5.

Do you want to go further? Watch this: Misconceptions About Falling Objects:

https://www.youtube.com/watch?v=aRhkQTQxm4w

CLASS 4: reported speech and giving your opinion

1. Reported speech
1.a. Examples

Direct speech **Mike says:**	**Reported speech**
1. 'I am tired.'	Mike said (that) he _____ tired.

3. ‘’My parents are fine.’	Mike said (that) _____ parents _____ fine.
4. ‘I am going to learn Chinese.’	He said (that) he _____ going to learn Chinese.
5. ‘I went to the movies last night.’	He said (that) he _____ to the movies the night before.
6. ‘I moved here two years ago.’	He said (that) he had moved _____ two years _____.
7. ‘I don’t know what to do now.’	He said (that) he _____ know what to do _____.
8. ‘Listen to me!’	He told _____ to him.
9. ‘Don’t get angry!”	He told me _____ angry.
10. ‘L.A. is bigger than Paris;’	He said (that) L.A. _____ bigger than Paris. *Or (because this statement is still true):* He said that L.A. _____ bigger than Paris.
11. ‘I must go.’	He said he _____ go.
12. ‘I may get fired.’	He said he _____ get fired.
13. ‘I will finish tomorrow.’	He said he _____ finish _____.

1.b. Recap on time and place

Direct speech	Reported speech
This morning	

Today	
Tomorrow	
Last year	
Now	
Here	

1.c. Recap on tenses

Simple present	Simple past Or simple present if the statement is still true
Simple past	Past perfect
Present perfect	
Past perfect	
Will	Would
Am / are / is	Was / were
May	Might
Was / were	Had been
Has been / have been	
Had been	
Imperative	Infinitive
Imperative - negative form	Not + infinitive

1.d. Practice

Direct speech	Indirect speech
1. ‘How old is she?’	He wondered…
2. ‘Where do you live?’	He wanted to know…
3. ‘You will feel better soon’	He said…

4. ‘Have you seen my house keys?’	He asked me…
5. ‘Please don’t call me after midnight.’	
6. ‘Stop complaining!’	
7. ‘The sun rises in the east.’	
8. ‘Water freezes at 32 degrees Fahrenheit.’	

1.e. Speaking activity on reported speech
(to be given in class or later in the semester depending on the time left)

2. Giving your opinion: training for test #2

2a. Exercice #1. Prepare for 3 minutes and get ready to speak.
Work alone. Elon Musk said “If humanity doesn’t land on Mars in my lifetime, I will be very disappointed.” Do you share his opinion?

2b. Exercise #2. Pair work.
Student A chooses the question from the list Student B will work on, and vice versa.
You have 3 minutes to try and improvise an answer with arguments and examples. Student A speaks first and Student B takes notes. Then switch roles.

1. ‘Eating meat should be banned.’ Do you agree with this statement?
2. ‘Animal testing is necessary.’ Do you agree with this statement?
3. Do you think euthanasia should be allowed?
4. Do you believe medical marijuana should be legalized?
5. Birth control pills should be free. Do you agree with this statement?
6. Should scientists work on a way to live forever?
7. Should vaccination be mandatory?
8. Should all public universities be free for everyone?

9. Do you think teachers should be replaced by online teaching and AI technology?
10. Do you think prisoners should pay for their own food and electricity in jail?
11. 'Teenagers should be trialed as adults when they commit a crime.' Do you agree with this statement?
12. Should unhealthy products such as sugary or greasy food be taxed at a higher rate?
13. 'Palm oil must be banned.' Do you agree with this statement?

3. Reporting to the group.

Example: I talked with xxx who said that…

4. Pronunciation: minimal pairs.

a. To walk to work
b. To live to leave
c. Still to steal
d. Thigh to sigh
e. Cap cab
f. Chip cheap
g. To sink to think
h. A pen a pain
i. A lid to lead
j. Ring wing

5. Pronunciation. Read the words out loud and circle the words in which you can you hear /h/

Ghost	Why?	Hospital	Hour
Home	Hoarse	Which	Hold
High	Honesty	Offhanded	How
Vehicle	Heritage	Exhausted	Heart
Hobby	Heir	Hair	Hi!

Do you want to practice more at home?

https://speakspeak.com/english-grammar-exercises/upper-intermediate/reported-speech

Class 5 - Cloning. Why we still haven't cloned humans

1. Grammar – expressing willingness and intention

1. a. same subjects

I want to sleep.

My friend needs to go to the hospital.

Negation: I don't want to leave now.

1. b. different subjects

I want you to go to work.

My parents don't want me to drink alcohol.

Negation: I don't want you to cry. / I want you not to cry. ➔ what's the difference?

1. c. other uses of "will"

Difference between will as a verb and will for the future tense

Examples:

a. She was willing to help.

b. He won't answer the phone. ➔ How would you translate this?

c. Person A: Say hi to your sister for me.

Person B: Will do. ➔ How would you translate this?

2. Exercise. Translate the following sentences into English.

1. J'aimerais que tu me respectes.

2. Je m'attends à ce que Jane se fâche.

3. Ils ne veulent pas que nous les aidions.

4. Nous avons besoin que tu télécharges ce document.

5. Il refuse de se faire tester.

6. Je ne veux pas que tu sois triste.

3. VIDEO. Vocabulary
Find the equivalents of the following words while listening to the video.
https://youtu.be/VYexAg2J6Kc (jusqu'à 4 min 50) Why we stil haven't cloned humans

1. des embryons		2. des obstacles	
3. retenir quelqu'un		4. inefficace	
5. des mères-porteuses		6. des anomalies	
7. des scientifiques		8. retirer	
9. mais on peut dire / soutenir que		10. des inconvénients	
11. théoriquement		12. une fausse couche	
13. causé, provoqué		14. tomber à l'eau, mourir (sens figuré)	
15. une réplique		16. des cellules souches	

4. Jurassic Park (movie). Watch the 'DNA explanation' extract.
1. How were dinosaurs made?

2. As scientists, do you believe their explanation makes sense? Explain.

5. Pronunciation: /h/ and hypercorrection

a. I love your hair!
b. Hi Harry, how are you?
c. Awesome! Harry has done his whole homework by himself.
d. I'll be ready in half an hour.

6. Pronunciation: sentence stress.

- You cannot stress all the words of the sentence. The 'music' is inside the words AND inside the sentences.

- Words such as the, a, an, to be, and… are usually not stressed unless you want to insist on them. Nouns, verbs and adjectives must or can be stressed depending on what you mean.

- Practice. Read these sentences. Pay attention to the intonation.

a. I was thinking of buying a car.
b. I'm sorry, I can't. I'm going to college.
c. Let's eat, Grandma!
d. I need to study tonight.
e. I didn't cheat on the test today! (=> What do you insist on?)
f. I didn't kiss that man / I didn't kiss that woman! (=> What do you insist on?)

- Changing the meaning.

Sometimes, the meaning changes depending on where you put the stress.

- The cat is sleeping. ➔ What's important in the sentence? Read.

- I <u>didn't</u> leave because I was angry. (I stayed)

- I didn't leave because I was angry. (I left but not because I was angry).
- Mike's cookies are delicious.
- Mike's cookies are delicious.
- Mike's cookies are delicious.

⇨ What are the differences between the three?

⇨ Read them out loud.

- Your Spanish is almost perfect.
- Your Spanish is almost perfect.
- Your Spanish is almost perfect.
- Your Spanish is almost perfect.
- What are the differences?
- Read them out loud.

- Silences and intonation ➔ use silences and proper intonation. Example:
- I love my parents, Lady Gaga, and Dwayne Johnson
- (not: I love my parents, Lady Gaga and Dwayne Johnson

7. *If time allows.* Writing. Recap the video "why we still haven't cloned humans" in your own words. Make between 6 and 10 complete sentences.

Finished early?

Name: _____ Date: _____

Cloning and Genetic Engineering

U E R M I O E A V A I O T K A X H T E Y Y J T D
Z N B Q P Z M H X M K V O T I J H B H J W E G X
R O Z D H E X I C U H N O I T R O B A M F H I J
N L W A I F T E U W R N D R I N A W B G Z T W N
A C M U U V K E U L D C B M S I B O E N E L F M
T M T E W Q E N R G A A R A D K U E N X O A S K
U U A Z B G R R E K X J R O W J S T W C H E N A
R Q K T K N F N S N N L O T H C E H I P X H N Q
A C U U X X E S C I N Z E T Z C E R I L N X Z O S
L B S I Z T U T O H T N A P O V Y C S R M J W T
O P W K I T J S X S T Y T L H G H S O E C V J T
R L B C S L E T O V L S C M E C L O N E D S Y H
D A S P F I H W D A A W I B X C B P B M L N X D
E Y H Z Q X R A Q R N W D X M Z X A P Q N R R R
R I J C Q P K N U D O L B U I N O K F G F K B I
T N C F C L L D W Y I H S G Y L K J C X V Q N N
K G R O W S D F D K T J V T Y F E A H R P C N K
P G J E E M N P H A O A W K C T T H W W L M S W
G O Y N U T N Z T V M G P L W H V R E A Q P P A
Z D O D Y N U M M Z E D O C C O C S Q N L Q O S T
J L P R M X G I N Z Y R N A L E C Z M D V B T R E
C K C X F L O O M Z I R I B L P C Z K M W U G R
J H M H V H I J A N U C D C M P X U F H F R O I
B H O L H D D O G D S C H I E E H J S H M M Z D

RISKS
BEN WILSON
CLONES
DICTATOR
ETHICS
CATHOLICS

ABUSE
ABORTION
CLONE
NATURAL ORDER
DIVERSITY
GENETICS

EMOTIONAL
LCFC
DOUBLE HELIX
PLAYING GOD
HORCRUX
DNA

HEALTH
CLONED
PETER KNEALE
DRINKWATER
VARDY
CLONING

Class 6: Nuclear power plants

1. Brainstorming. What do you know about energy sources? Can you list some of them?

2. Sort the energy sources in the chart

Renewable energy sources	Non-renewable sources

3. Definition. What is a nuclear plant? How do you think it works?

Video “Journey to the heart of energy” https://www.youtube.com/watch?v=-8JkzeQDHKM

4. Vocabulary. Find the English equivalents in the video.

1. une centrale nucléaire		2. la chaleur	
3. principalement / simplement		4. une usine	
5. refroidissant		6. le carburant, le combustible	
7. des pastilles d’uranium		8. des barres de combustible	
9. de l’acier		10. un reservoir	
11. rempli(e) de		12. le coeur du réacteur	
13. à l’état liquide		14. de la vapeur	
15. du cuivre		16. une bobine	
17. de cette façon, par ce moyen		18. le courant	
19. une tour de refroidissement		20. des déchets radioactifs	
21. de la plus haute		22. trier	

importance			
23. stocker		24. des gaz à effet de serre	

5. Match the words with the definitions
➔ an atom - a control rod - a generator - a switchyard - uranium - a turbine

a. _____: a silver-white, radioactive metal element used in the production of nuclear energy.

b. _____: a machine that converts one form of energy into another.

c. _____: a usually enclosed area for the switching facilities of a power station

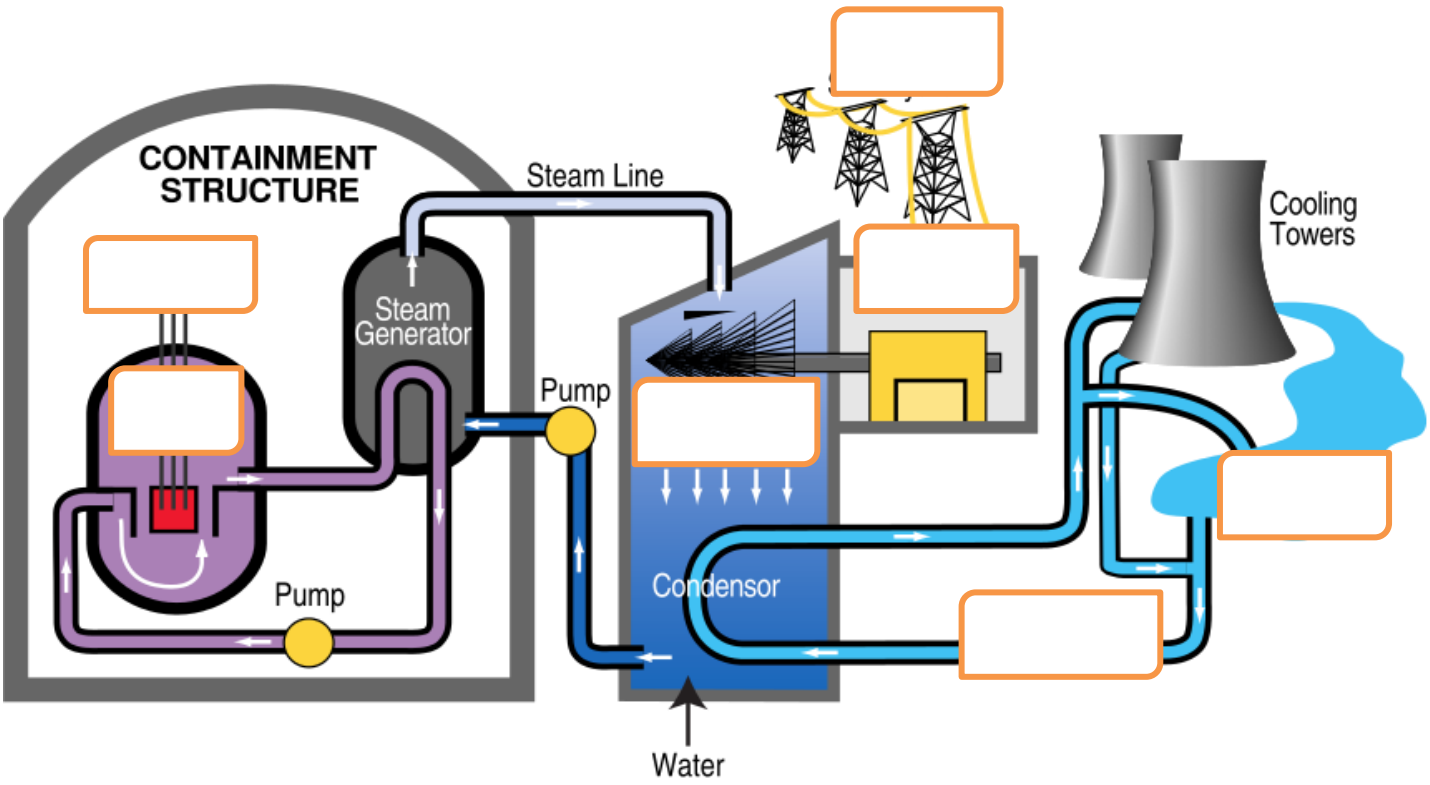
d. _____: a steel or aluminum rod used in nuclear reactors in order to control the rate of fission of the nuclear fuel

e. _____: a tiny unit of matter that has all the chemical properties of a particular element

f. _____: a type of machine in which a wheel is driven by the movement of liquid or gas so that power is produced

6. Place the elements on the image

1. Control rods – 2. cooling water – 3. generator – 4. reactor – 5. turbine – 6. reservoir – 7. switchyard



https://commons.wikimedia.org/wiki/File:PWR_nuclear_power_plant_diagram.svg

7. Speaking. Do you believe the video is an objective presentation of nuclear power?

Part 2 – Grammar and expressions: comparing and contrasting

1. Lesson: quick recap of comparisons
Short adjectives and long adjectives

2. Exercise. Make sentences using comparisons and the following words:

2. a. lead / cheap / gold

2. b. coal / to pollute / wind turbines

2. c. mass / proton / equal / mass / neutron

2. d. When a thermometer is heated, high / temperature / long / column of mercury

2. e. MRI / clear / X-rays

2. f. Jupiter / to orbit / far from the sun / the Earth

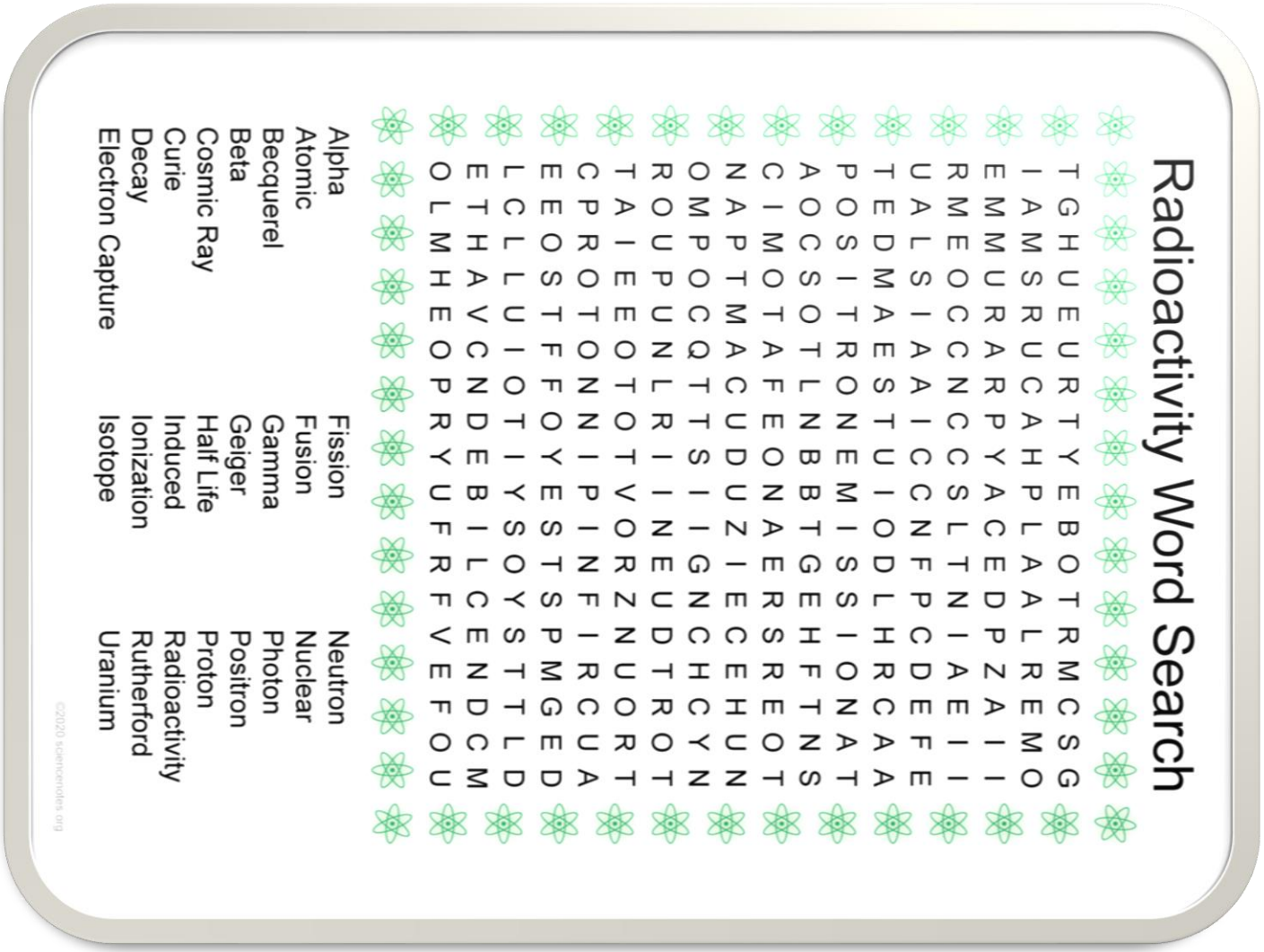
2. g. Scientists / to discover / a star / 2x / big / sun.

3. Idioms. Can you explain these expressions?

- Better late than never
- Better safe than sorry
- The sooner the better
- Sooner or later
- Like father like son
- As clear as crystal
- Easier said than done

Part 3. In class if time allows or at home, watch the video: “Our Friend The Atom” Watch it once and share your opinion about it. (the first four minutes only). Does anything surprise you?
https://www.youtube.com/watch?v=pkwadgJORFM

Finished early?



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