The challenge of resource management
Energy

Niveau: Seconde

Thème de géographie : Sociétés et environnements : des équilibres fragiles

Question: Des ressources sous pression: tensions, gestion

The challenge of resource management – Energy

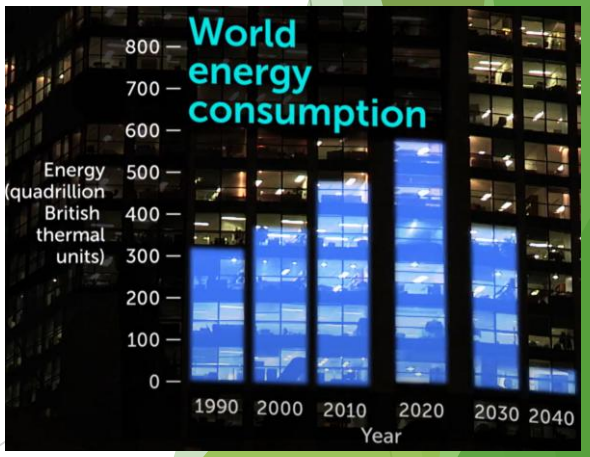
Objectifs généraux:
- Les élèves doivent s'approprier des informations issues de divers documents afin de les expliquer puis de les remobiliser dans un débat argumenté
- Ils pratiquent des activités de compréhension orale et écrite, expression orale et expression écrite

Lien avec la formation: mise en œuvre des 3L (OF, FOR et THROUGH) – voir diapo suivante

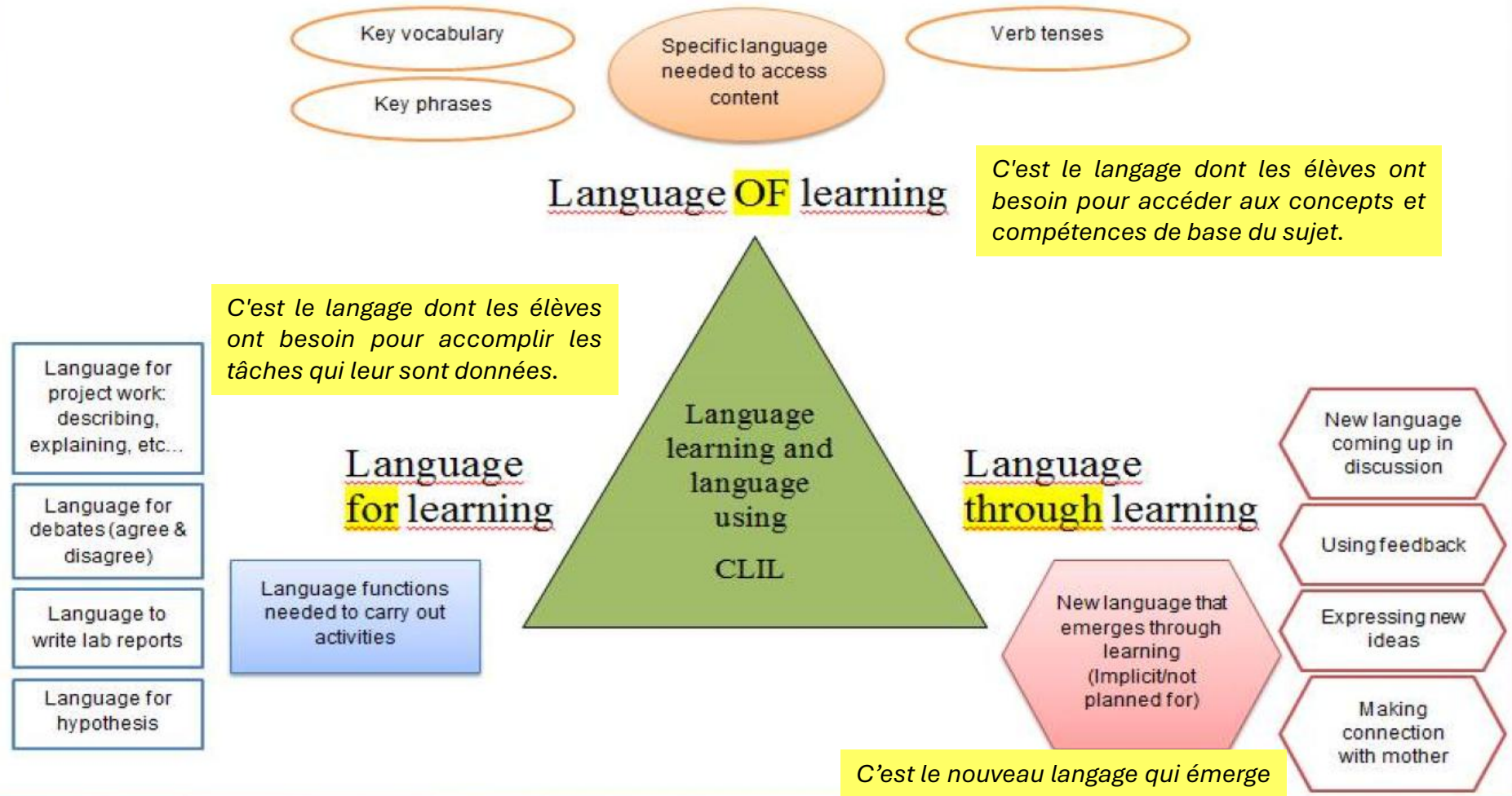
Production finale: Un débat écrit et joué par les élèves.

Durée: 6 heures

Documents – ressources:
- Vidéo BBC Geography - Resource Management – Energy (2017) 2mn48 (ancien mais adapté pour faire émerger le voc) https://www.youtube.com/watch?v=cnZ9tYpkEfM
- 6 textes issus du site https://www.britannica.com/procon/alternative-energy-debate
- Des informations complémentaires données par le professeur



The language Triptych



« Language OF » et « Language FOR Learning » » sont prévisibles et doivent être planifiés. Le « Language THROUGH Learning » est spontané et imprévisible.

C'est le nouveau langage qui émerge au cours de l'apprentissage. Il est lié à l'engagement actif de l'élève dans l'utilisation de la langue et la réflexion.

Séance 1 : Vidéo BBC Geography, questionnaire puis échange avec élèves
Objectif: Faire émerger le vocabulaire spécifique et les principaux enjeux

Language OF Learning

Vidéo: BBC Geography - Resource Management – Energy (2017) 2mn48
https://www.youtube.com/watch?v=cnZ9tYpkEfM

Consignes:

Watch the video and answer the questions:

1- Why is the demand of energy growing in the world? (2 reasons)

2- Name 3 countries that have energy security and explain why.

3- Give 3 reasons why some countries have energy insecurity

4- What are the drawbacks of fossil fuels?

5- Which renewable energies are mentioned in the video?

Vocabulaire:

Energy security /insecurity
Fossil fuels
Renewable/non renewable energy
Finite

Coal-gas-oil
Uranium
Solar-tidal-wind-hydroelectric energies

Plus:
Greenhouse gas emissions, footprint…

Problématique: ***Can Alternative Energy Effectively Replace Fossil Fuels?***

Séance 2: Travail individuel sur document.
Objectif: Appropriation des termes du débat et enrichissement du vocabulaire

Can Alternative Energy Effectively Replace Fossil Fuels?

Language OF Learning + **Language FOR Learning**

Démarche:
6 textes différents: 3 textes « pour » et 3 textes « contre ». **Un texte par élève.**

- Etape 1: Les élèves lisent, comprennent leur texte et se préparent à présenter son contenu à l'oral
- Etape 2: Ils se déplacent dans la classe et recherchent ceux qui défendent le même point de vue qu'eux: ils doivent pour cela expliquer le contenu de leur texte.
- Etape 3: Le professeur relève et vérifie. Puis correction rapide avec les élèves en classe.

« La langue ne doit pas être un obstacle »

Faire varier la longueur des textes

Argument 2

"Humanity's history is full of energy transitions that moved from one dominant source of energy, such as whale oil or timber, to a more efficient source over time," states Cornelis van Kooten, professor of economics at the University of Victoria. "The difference now is that governments want to force the transition on an expedited timeline while optimistically assuming a technological breakthrough in the future." Realistic policies and interim steps are critical to affecting positive climate change.

American renewable energy use has hovered between a low of 5.37% (in 2001) and a high of 11.44% (in 2019) since 1949. And nuclear energy, not used until 1959, topped out at 8.89% in 2002. In all, alternative energy use in the United States (the total use of both renewable sources and nuclear energy) has never topped 20% (the highest is 19.98% in 2017) of total energy use.

Further, international agreements have failed to put a dent in America's fossil-fuel use. In the eight years since the U.S. signed the Paris Agreement in 2015 to reduce greenhouse gas emissions to net zero by 2050, American fossil-fuel use has only minimally fluctuated between a high of 81.22% (in 2015) and a low of 73.08% (in 2020).
With only some 25 years until the 2050 net-zero emissions deadline, no statistical increase in the use of alternative energies, and no clear policy changes, how can we expect alternative energies to replace fossil fuels?
What's needed instead are reasonable interim steps, not pie-in-the-sky (= unrealistic) policymaking. Responsible programs, perhaps in conjunction with the use of cleaner bridge energies such as natural gas, can better assist larger countries down the road to cleaner energy use.
With doomsday like predictions looming about climate change, "it's essential to focus on the realistic, broad-based approaches that are already advancing environmental progress," says Sam Winstel, writer for the American Petroleum Institute.

Argument 3

While it may sound dramatic, the choice is between using alternative energies and your great-great-grandchildren inheriting an uninhabitable planet thanks to the continued use of fossil fuels.

Global warming will result in catastrophe if left unchecked by measures including a swift transition away from fossil fuels.

Journalist Sarah Kaplan summarizes, "Climate disasters will become so extreme that people will not be able to adapt. Basic components of the Earth system will be fundamentally, irrevocably altered. Heat waves, famines and infectious diseases could claim millions of additional lives by the 21st century's end." If we do nothing, "a child born today would live to see several feet of sea level rise, the extinction of hundreds of species and the migration of millions of people from places where they can no longer survive."

However, the solutions do not "depend on something that still needs to be invented. We actually have all the knowledge we need. All the tools we need. We just need to implement it," says Friederike Otto, a climate scientist at Imperial College London.

The United Nations states simply, "Energy is at the heart of the climate challenge – and key to the solution....We need to end our reliance on fossil fuels and invest in alternative sources of energy that are clean, accessible, affordable, sustainable, and reliable."

« La langue ne doit pas être un obstacle » → Apporter des aides (dans le texte, wordbox)

Argument 3

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Argument 3 (avec aide)

While it may sound dramatic, the choice is between using alternative energies and your great-great-grandchildren inheriting an uninhabitable planet thanks to the continued use of fossil fuels.

Global warming will result in catastrophe **if left unchecked (= if it is left uncontrolled)** by measures including a swift transition away from fossil fuels.

Journalist Sarah Kaplan summarizes, "Climate disasters will become so extreme that people will not be able to adapt. Basic components of the Earth system will be fundamentally, irrevocably altered. Heat waves, famines and infectious diseases could claim millions of additional lives by the 21st century's end." If we do nothing, "a child born today would live to see several feet of sea level rise, the extinction of hundreds of species and the migration of millions of people from places where they can no longer survive."

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« La langue ne doit pas être un obstacle » → Simplifier les textes

Argument 2 (extrait)

“Humanity’s history is full of energy transitions that moved from one dominant source of energy, such as whale oil or timber, to a more efficient source over time,” states Cornelis van Kooten, professor of economics at the University of Victoria. “The difference now is that governments want to force the transition on an expedited timeline while optimistically assuming a technological breakthrough in the future.” Realistic policies and interim steps are critical to affecting positive climate change.

(…)

What’s needed instead are reasonable interim steps, not pie-in-the-sky *(= unrealistic)* policymaking. Responsible programs, perhaps in conjunction with the use of cleaner bridge energies such as natural gas, can better assist larger countries down the road to cleaner energy use.

With doomsday like predictions looming about climate change, “it’s essential to focus on the realistic, broad-based approaches that are already advancing environmental progress,” says Sam Winstel, writer for the American Petroleum Institute.

Argument 2 texte simplifié (utilisation d’une IA)

“Humanity’s history is full of energy transitions that moved from one dominant source of energy, such as whale oil or timber, to a more efficient source over time " says Cornelis van Kooten, professor of economics at the University of Victoria. "The difference now is that governments want to make this change more quickly and are hoping that new technology will help." It is very important to have realistic policies and temporary steps to help with climate change.

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What’s needed instead are reasonable interim steps, not unrealistic policymaking. Responsible programs, perhaps in conjunction with cleaner transition energies such as natural gas, could help larger countries transition to cleaner energy use more effectively.

With apocalyptic predictions about climate change, Sam Winstel, writer for the American Petroleum Institute, says: “It’s essential to focus on the realistic approaches that are already advancing environmental progress”.

Consignes:

STEP 1 :

1- Read and understand the document given. Underline or highlight the new words.

2- Answer the following question : is your text containing « pro » or « con » arguments ?

3- Be prepared to explain your arguments clearly to the other students. Write ideas, figures, words on your paper to help you. But do not copy the whole text!

STEP 2 :

1- Among the students, find those who share your opinion (pro or con)

2- And among them, find those who have the same arguments as yours

Write their names on your paper

How? Move around the classroom and ask your classmates what their text is about.

Speak English during this step!

Finished?

Go back to your seat

Find out more about the opinion you promote by searching for other advantages and disadvantages of the different types of energy

Séance 3: Travail de groupe. Ecriture d'un débat
Objectif : Remobiliser les acquis dans un exercice de création de contenu

Language THROUGH Learning

Démarche:

- Construction libre ou par le professeur de groupes d'élèves ayant des arguments différents, avec un équilibre pour/contre
- Chaque groupe écrit le débat qu'il jouera en classe
- Le professeur peut apporter des arguments supplémentaires

STEP 3:

Imagine, write and perform a debate about the question "**Can Alternative Energy Effectively Replace Fossil Fuels?"**

- Use the information already collected in the previous exercise and additional information given by the teacher if necessary
- You can ask an external student to take on the role of presenter or you can organize the debate as a discussion between different people, whose opinions may change during the discussion.

Séance 4 : Passage des groupes

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Objectif final: faire écrire et jouer un débat par les élèves. Implique activités de compréhension orale, expression orale et expression écrite.
Capacités mises en œuvre: comprendre un document – s'exprimer à l'oral – coopérer et mutualiser

Démarche:

- Visionnage d'une vidéo + questions. Objectifs: faire émerger le vocabulaire (H1)
- Travail sur documents. Obj: appropriation des enjeux, des termes du débat et de davantage de vocabulaire nécessaire. H1
  L'ensemble des documents est issu du site https://www.britannica.com/procon/alternative-energy-debate
- Il est possible de simplifier les documents qui peuvent être compliqués pour certains élèves

Démarche:

- 6 textes différents: 3 pour/3 contre – 1 texte par élève en veillant à ne pas donner le même texte à des voisins
- Lecture du texte, repérage des termes difficiles, qu'il est possible de chercher dans un dictionnaire. Questions: un texte pour ou contre? Consigne: être capable d'expliquer le contenu de son texte à un autre élève sans le lui lire mais en ayant des notes (mots-clés, schémas…)
- Déplacement dans la salle avec 2 objectifs: trouver ceux qui sont du même côté; parmi eux trouver ceux qui ont exactement le même texte. Le noter. Pour ceux qui ont fini: rechercher d'autres arguments.

Prof relève et vérifie. Puis correction rapide avec les élèves en classe.

- Construire des groupes d'élèves ayant des arguments différents, avec un équilibre pros/cons. Chaque groupe écrit un débat qu'il jouera en classe (ou une partie et le reste en vidéo). Thème: A debate: Can alternative energy effectively replace fossile fuels? Le groupe peut demander à un élève extérieur de jouer le rôle de présentateur ou organiser le débat comme une discussion entre

Lire, comprendre un texte
Ecrire, schématiser
H1

S'exprimer à l'oral
Comprendre un exposé oral
H2

H3

Ecrire
S'exprimer à l'oral
H3 et H4

Argument 2

"Humanity's history is full of energy transitions that moved from one dominant source of energy, such as whale oil or timber, to a more efficient source over time," states Cornelis van Kooten, professor of economics at the University of Victoria. "The difference now is that governments want to force the transition on an expedited timeline while optimistically assuming a technological breakthrough in the future." Realistic policies and interim steps are critical to affecting positive climate change.

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Further, international agreements have failed to put a dent in America's fossil-fuel use. In the eight years since the U.S. signed the Paris Agreement in 2015 to reduce greenhouse gas emissions to net zero by 2050, American fossil-fuel use has only minimally fluctuated between a high of 81.22% (in 2015) and a low of 73.08% (in 2020).
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Texte simplifié

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Since 1949, the amount of renewable energy used in America has fluctuated between a low of 5.37% (in 2001) and a high of 11.44% (in 2019). And nuclear energy, not used until 1959, accounted for 8.89% of the total in 2002. In all, alternative energy use in the United States (this includes both renewable sources and nuclear energy) has never been more than 20% of total energy use. The highest was 19.98% in 2017.

Further, international agreements have not reduced America's fossil-fuel use. In the eight years since the U.S. signed the Paris Agreement in 2015 to reduce greenhouse gas emissions to net zero by 2050, American fossil-fuel use has only changed a little between a high of 81.22% (in 2015) and a low of 73.08% (in 2020).
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Séance 3: Temps de médiation puis correction H2 + H3

Déplacement des élèves dans la classe, avec une double consigne. Chaque élève doit trouver et relever le nom de:

- Ceux qui ont la même opinion que lui
- Parmi eux, ceux qui ont exactement le même texte que lui.

Pour ceux qui ont fini rapidement: rechercher d'autres arguments.

Le professeur relève et vérifie. Puis correction rapide avec les élèves en classe.

Séance 2: Travail individuel sur documents.
Objectif: appropriation des enjeux, des termes du débat et de davantage de vocabulaire nécessaire.

Can Alternative Energy Effectively Replace Fossil Fuels?

Whether alternative energy can meet energy demands effectively enough to phase out finite fossil fuels (such as coal, oil, and natural gas) is hotly debated. Alternative energies include renewable sources—such as solar, tidal, wind, biofuel, hydroelectric, and geothermal—and nonrenewable nuclear power.

- 6 textes différents: 3 textes « pro » et 3 textes « con » – 1 texte est donné à chaque élève en veillant à ne pas donner le même texte à des voisins. Il est possible de simplifier les documents qui peuvent être compliqués pour certains élèves

- Lecture du texte, repérage des termes difficiles, qu'il est possible de chercher dans un dictionnaire.

  Consignes:
  - Dire si le texte répond oui ou non à la question?
  - Être capable d'expliquer le contenu de son texte à un autre élève sans le lui lire mais en ayant des notes (mots-clés, schémas, chiffres...)

Temps 3: Temps de médiation puis correction H2 + H3

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