CLIL Lesson Plan 4 (Karolina Mysłowska, VIII LO, Bielsko-Biała, February 2020)

Topic: What are seed banks?

Level: 3rd-4th grade of secondary school, advanced level of English (C1-C2)

Timing: 45 minutes

Aims:

- To present both general (taught in English lessons, Longman, Repetytorium maturalne, Unit 11 „Nature") and specific (taught in biology lessons) vocabulary connected with the topic of nature
- To introduce the concept of seed banks as a way to conserve species
- To help learners understand that learning can be achieved in a second language.

Criteria for assessment

Teacher, peer- and self-assessment processes will be used to assess how well learners:

- Understand conservation of species
- Describe the advantages of conserving plants by using seed banks
- Why conserve rare plants
- Construct and use pre-taught terminology

Teaching Objectives

Content	**Cognition**
• Introduction of the topic • What seed banks are • Why and how to conserve plants	• Provide learners with opportunities to understand the key concepts and apply them in different contexts. • Discuss seed banks and conservation of plants • Encourage knowledge transfer about seed banks and conservation • Vocabulary building, learning and using. • Arouse learner curiosity – creative use of language and learner questions.

Culture

- Identify what seed banks are and why they are needed
- Understand that they can learn no matter which language they are using.

Communication

Language of learning	Language for learning	Language through learning
key vocabulary: seed vault, conserve, seed banks, seed, store, crop strains, pests strains, yields, viability, crop plants	Asking each other questions: What do you know about…? Can you tell me sth about..? What is a seed bank? Why conserve a plant? Ordering: Firstly…, secondly…, thirdly…, finally…	Distinguish language to carry out activities. Retain language revised by both the teacher and the learners. Make use of peer explanations. Record, predict and learn new words which arise from activities.

	Comparing and contrasting: Other: How do you spell…? What does … mean?	

Learning outcomes (what learners will be able to do by the end of the lesson):

- demonstrate understanding of concept of seed banks
- describe why seed banks are created
- classify information
- use language creatively
- ask and respond to wh-questions about their work
- use a class vocabulary record of new words.

Instruments for assessment:

- T monitors group and individual activities
- Learners interact with their partners.
- Ls ' participation in all tasks and activities.
- Ls complete information gaps.
- Ls asks each other questions "What have you learned today?".

Resources

Worksheets, whiteboard, pens, leaflets from Pinterest; Skinner, Gary and Ann Skinner: Revise Salters-Nuffield, AS/A Level, Biology A, Revision Workbook, p.70, p.174

Teaching and learning activities

TED "Why we're storing billions of seeds – Jonathan Drori" (7 minutes)
https://ed.ted.com/lessons/the-race-to-sequence-the-human-genome-tien-nguyen

Warm up exercise exercise. "Seed banks – associations?"
(warm up/ scaffolding activity on the board including brainstorming, resulting in a mind-map)

Answer:
seed vault, conserve, seed banks, seed, store, crop strains, pests strains, yields, viability, crop plants

Exercise 1: (in teams of 3-4 students, 10 minutes)

The first withdrawals of seeds from Svalbard Global Seed Vault were made in 2015. These were seeds of ancient varieties of wheat from which our modern forms were derived. They were needed to set up new research facilities in Lebanon and Morocco to replace the one, which is currently, unusuable, in Syria.
Discuss and make a list of reasons why research is being carried out on ancient strains of wheat.

Answer:

As the world changes, not least due to a change in climate, existing crop strains may become less successful. In the case of wheat, there may be increased drought stress or new pests strains may arise. Genes found in ancient strains, which have been eliminated form done ones, may prove useful in combatting threats to wheat yields.

Exercise 2 (in teams of 3-4 students, 10 min.)

Make a list of advantages of conserving plants by using seed banks.

Answer:

Seed banks are advantageous because the seeds are stored in cool and dry conditions which means they can be stored for a long time. This is less costly than conserving living plants so large number of plants can be stored. Also, the take up less space and require less care. Their viability can be tested at regular intervals. The species is less likely to be damaged by natural disasters and disease.

Exercise 3 (in teams of 3-4 students, 5 minutes)

Explain 2 reasons why it might be considered sensible to conserve a rare plant by storing its seeds in a seed bank. Discuss.

Answer:

The wild plants may carry genes that can be used in crop plants to confer resistance to pests and diseases. The plant may produce a chemical which might be useful in medicine, such as an anti-cancer agent.

***Exercise 4. Sum up the discussion (critical thinking, the whole class, 10 minutes)**.*

Take into account both the positive as well as the negative aspects of seed banks, relate it to the geo-political situation (culture) of a country and try to form your own opinion.