Erasmus+

‘ Smarter…Greener…Safer…’

LESSON PLAN_ONLINE WORKSHOP 2

Topic: Key To Green Success

Brief description of the lesson:

The lesson involves a few stages, thus it may be conducted as a longer workshop or divided into several shorter classes. The lesson will help students to realise that entrepreneurship can be understood as creativity, innovation, risk-taking and the ability to plan and manage projects in order to achieve objectives. During this lesson students will be given an opportunity to develop the above competences while working in a team, competing with other teams and using their scientific and ecological knowledge. The suggested lesson plan refers to a well-known battleship game and involves a series of tasks and exercises which stimulate students’ creative thinking and problem solving.

Objectives: students:

- develop creativity and shape business-like attitude
- notice the benefits of creative thinking and acting
- take risk in simulated situations
- understand the role of soft competences in everyday life
- develops teamwork skills
- use their scientific knowledge to solve problems

Methods and techniques:

- teamwork
- working with worksheets

Materials and tools:

- worksheets for groups of students
- task sheets
- sheets of A4 paper
- coloured marker pens
- 12 matches
- 40 straws
- plasticine
- 2 bricks (or heavy books)
- 2 bamboo sticks/broomsticks
- 2 large sheets of paper

Preparation for classes:

- preparing a classroom
- copying and cutting task sheets

Class duration: 2-4 lessons (depending on the duration of the classes and the size of groups)

Class activities in brief:

1. Having welcomed the students ask what competences (that is knowledge and skills) are necessary to run own business, e.g. in organic farm business. Make a list on the board or on a large sheet of paper.

Suggested answers: opportunity orientation, originality, involvement, motivation, persistence, self-confidence, inventiveness, readiness to take risk, knowledge of a given business, computer literacy, creativity, knowledge of management and finance basics, ability to plan, knowing the basics of farming, etc.

2. Ask students to think which of the listed competences are universal, so that they are useful not only in our career but also in everyday life? Explain the meaning of hard competencies (scientific and technical skills necessary to perform a specific job) and soft competencies (practices and routines, personality traits, interaction skills. Explain that the lesson in a form of team competition will facilitate development of these competences.
3. Divide students into two equal teams and discuss the rules they will have to follow. You may use Appendix 1.
4. Play the game. You will find the answers in Appendix 4
5. When the game is over, award the winners and discuss the course of the game with students.

EVALUATION

After you have completed the whole activity, discuss the competences the students have used or learned while playing the game, emphasising the connection of scientific knowledge with entrepreneurial skills necessary to play the game successfully. Ask them to draw a map of the competences used and discuss their importance in everyday life.

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Appendix 1

Rules of the game

1. There are two equal teams playing the game and an instructor.
2. Each team chooses a leader who will represent all team members and in case of any dispute he will have a deciding vote.
3. The rules of the game are based on a well-known battleship game but they have been somewhat modified. Each team gets a sheet of paper with two 10x10 boards. (appendix 2). The columns are marked with subsequent letters and rows with subsequent numbers. Each team has a "fleet" of 10 ships:
    a. 4 single-masted sailing boats, taking 1 square
    b. 3 two-masted sailing boats, taking 2 neighbouring squares
    c. 2 three-masted ships, taking 3 neighbouring squares
    d. 1 four-masted ship, taking 4 neighbouring squares

The ships can be placed in any part of the board, provided they do not touch one another with any side or corners diagonally. Additionally, each team is given a list of three surprise squares which should be drawn on their boards and marked with numbers 1-3. An example list may be like this:
Team 1
no. 1 – D6
no. 2 – F9
no. 3 – A10
Team 2
no. 1 – F6
no. 2 – A9
no. 3 – C10

Surprise squares may be a part of ships (battleships).

4. The players have to hit the opponent's ship by shooting – giving coordinates of a given ship (e.g. B5). The shots are taken alternately by successive team members of both teams. If one team hits a ship they continue shooting until they miss. A ship is sunk when the opponents guess the location of the whole ship. When the opponents miss, the captain says "miss", when they hit a ship, the captain says 'hit' or 'hit and sunk'. Each shot at the opponents' ships is marked with a dot on an empty board. If a ship is hit then a relevant square is marked with a cross. At the end of the game the initially empty board should reflect the location of the opponents' ships.
5. Each time a ship is sunk both teams complete a task. The points which reflect the number of squares taken by a sunk ship are given to the team which will complete the task better and more quickly. The tasks can be found in Appendix 3.
6. When a team hit a surprise square, the captain says 'surprise' and the instructor informs about consequences of such move.
    a. square no. 1 – you take over the opponents' points
    b. square no. 2 – you lose half of the points
    c. square no. 3 – you swap points with the opponent
7. The winner is the team which scores more points.

Appendix 2

Our ships

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

Draw the following on the board above:

4 single-masted sailing boats, taking 1 square

3 two-masted sailing boats, taking 2 neighbouring squares

2 three-masted ships, taking 3 neighbouring squares

1 four-masted ship, taking 4 neighbouring squares

Our opponent's ships

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

10										

Appendix 3
The Quiz

Tasks for 1 point (for sinking the single-masted boats)

1. Ecology:
a) is the branch of biology which studies the interactions among organisms and their environment
b) is the relationship between the biotope and biocenosis
c) describes forms of degradation of the environment
2.Detergents are:
a) fertilizers
b) water-soluble cleansing agents
c) expired food
3.The World Environment Day in 2018 is/was on:
a) 5th June
b) 22nd April
c) 17th September
4.Electricity is the movement of:
a) atoms
b) molecules
c) electrons
d) neutrons
5. The main causes of so-called 'acid rains' are:
a) sulphur and nitrogen
b) heavy metals
c) fluorine and ozone
6. Most of the energy we used originally came from:
a) the sun
b) the air
c) the soil
d) the ocean
7.In rural areas this gas can be generated and used e.g. for cooking:
a) biogas
b) oxygen
c) ammonia
8. Which forests are most resistant to air pollution:
a) coniferous
b) deciduous
c) mixed

Tasks for 2 points (for sinking the two-masted boats)

9. Indicate bad habits (more than one answer possible):
a) leaving devices in a standby mode
b) waste segregation
c) eating in fast food networks
d) using disposable items
10. Which shouldn't be planted near the highway?

a) acacias, poplars, beeches
b) lettuce, tomatoes, carrots
c) tulips, daisies, roses

11.Which month is World Car Free Day celebrated in?
a) September
b) April
c) May

12. Air is the natural resource which is:
a) renewable
b) non-renewable
c) neither of the above

13. Which of the listed below are dangerous for the environment:
a) rotten fruit peels, used paper
b) food leftovers, cardboard
c) batteries, medicines

14. The WWF logo - one of the world's largest organizations acting for the benefit of the environmental protection is:
a) bison
b) panda
c) stork

Tasks for 3 points (for sinking the three-masted boats)

15. Biodegradation of …. may take up to 500 years
a) plastic bottles
b) cans
c) tires

16.Electrical energy can be produced from:
a) chemical energy
b) radiant energy
c) mechanical energy
d) all of the above

17.Coal, petrol, natural gas and propane are called fossil because:
a) they are burnt to release enery
b) they are non-renewable
c) they were formed from the buried remains of plants and animals

18.Global warming focuses on an increase in the level of which gas in the atmosphere?
a) carbon dioxide
b) sulphur dioxide
c) ozone

Tasks for 4 points (for sinking the four-matsed boats)

19.In a nuclear power plant, uranium atoms:
a) burn and give off heat energy
b) split and give off heat energy
c) combine and give off heat energy

20. The sign below means that the product:

a) Is suitable for animals
b) Contains substances harmful to animals
c) Was not tested on animals

Appendix 4

The Quiz answer key:
1. a
2. b
3. a
4. c
5. a
6. a
7. a
8. b
9. a, c, d
10. b
11. a
12. a
13. c
14. b
15. c
16. d
17. c
18. a
19. b
20. c