Scenario Script

The scenario will need 6 hours (including the solar oven construction). Teacher could adapt the activities (order and number) according to the deeper study of the scenario. Some activities could be done and not others (for example, I propose to do at home the activities about the videos, it is optional). The same for the activities proposed to do at home (scale-up). Activities can be done in groups (pairs ) or individual  . Teacher could propose the way of work.
In case teacher wants to follow the entire scenario, the activities proposed for each session will be the below: ***(More information in "script-Teaching materials")***
(More information in "Teaching materials")

<u>1st teaching period</u>

1st Activity:

Activity number: -

Time: 5'

Type of activity: Speaking activity. Introducing the topic.

Class organisation: The entire group.

Actions/Tasks: Teacher introduces the topic. Explain the introductory text. Discuss about the topic. Solving doubts.

2nd Activity:

Activity number: Activity 1

Time: 5'

Type of activity: Writing activity.

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to write three different energy resources explaining one of its uses.

3rd Activity:

Activity number: Activity 2

Time: 15'

Type of activity: Reading (students)/Explaining (teacher) the text "Energy resources classifications". Underlining or fill in the gaps in a mind map activity.

Class organisation: In pairs (optional individually)

Actions/Tasks: Students have to read the text "Energy resources classifications" (Optional teacher explain the text). After that students have to underline with different colours the different energy resources classifications or fill in the gaps in a mind map.

4th Activity:

Activity number: Activity 3

Time: 15’

Type of activity: Classifying activity

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to classify the different energy resources in the correct column. Some of them can be putted in more than one column. **Important**: The answers are given in the ***case of Spain in 2021***. Other countries should revise the answers (especially in conventional or alternative energy resources columns). Teacher could adapt the answers or do the activity with the table (not in the Include Moodle).

5th Activity:

Activity number: Activity 4

Time: 15’

Type of activity: Drawing activity.

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to draw three of the energy resources that appear in activity three.

6th Activity:

Activity number: -

Time: 5’

Type of activity: Speaking activity (summarizing activity)

Class organisation: The entire group.

Actions/Tasks: Teacher should summarize the contents learnt in the first period. Solving doubts. Possible discussion.

2nd teaching period

1st Activity:

Activity number: -

Time: 5’

Type of activity: Review the things studied the previous day. Teacher solves doubts. Possible discussion.

Class organisation: The entire group.

Actions/Tasks: Teacher review with the group contents from the previous day. Discussing and solving doubts.

2nd Activity:

Activity number: -

Time: 10’

Type of activity: Speaking-explaining (teacher) or reading activity (students).Optional watching the propose video.

Class organisation: the entire group.

Actions/Tasks: Teacher should explain (or students read) the text "Fossil fuels". The video "Fractional distillation. The chemistry journey. The fuse school" could help the students to understand better the contents.

Optional activities about the video "Fractional distillation. The chemistry journey. The fuse school***"*** https://www.youtube.com/watch?v=alzTofTj7CQ

Optional: Do the activities according to the time and the type of students in the class. I recommend doing the activities at home.

Actions/tasks: Students have to watch the video, after that, read the questions, watch the video again and answer the questions.

3rd Activity:

Activity number: Activity 5

Time: 10'

Type of activity: Writing activity (about the text "fossil fuel").

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to answer the questions about the text "Fossil fuels".

4th Activity:

Activity number: -

Time: 10'

Type of activity: Reading (students)/ explaining (teacher) activity. Watching a video (optional)

Class organisation: The entire group.

Actions/Tasks: Teacher should explain the text "Nuclear energy" (or students to read). Solving doubts. Possible discussion. The video "Fission vs fusion. What is the difference" could help students to understand better the contents.

Optional activities about the video "Fission vs fusion. What is the difference?" *https://www.youtube.com/watch?v=2W-GEE6YU4M*

Optional: Do the activities according to the time and the type of students in the class. I recommend doing the activities at home.

Actions/tasks: Students have to watch the video, after that, read the questions, watch the video again and answer the questions.

5th Activity:

Activity number: Activity 6

Time: 3'

Type of activity: Fill in the gaps or multiple choice activities.

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to find if the picture represents a nuclear fission or a nuclear fusion reactions.

6th Activity:

Activity number: -

Time: 5'

Type of activity: Reading (students)/explaining (teacher) activity.

Class organisation: The entire group.

Actions/Tasks: Teacher should explain the text "to know more about nuclear energy". Solving doubts. Possible discussion.

7th Activity:

Activity number: -

Time: 5'

Type of activity: Reading (students)/explaining (teacher) activity.

Class organisation: The entire group.

Actions/Tasks: Teacher should explain the text "Renewable energy resources". Solving doubts. Possible discussion.

8th Activity:

Activity number: Activity 7

Time: 12'

Type of activity: Writing activity (answering questions)

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to write the proposed answers about the graph "Renewable electricity production in the E.U. (Tw·h)". The text "Renewable energy resources" could help the students to answer some questions.

3rd teaching period

1st Activity:

Activity number: -

Time: 5'

Type of activity: Speaking activity.

Class organisation: The entire group.

Actions/Tasks: Teacher review the things studied the previous days. Teacher solves doubts. Possible discussion.

2nd Activity:

Activity number: Activity 8

Time: 10'

Type of activity: Put pictures in the correct column or multiple choice activities.

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to put pictures in the correct column or solve the multiple choice activity.

3rd Activity:

Activity number: Activity 9

Time: 5'

Type of activity: Fill in the gaps activity.

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to fill in the gaps with the correct word.

4th Activity:

Activity number: -

Time: 10'

Type of activity: Reading (students)/explaining (teacher) activity. Watching a video (optional)

Class organisation: The entire group.

Actions/Tasks: Teacher should explain the text "*Solar energy*" or students to read. Teacher solves doubts about the text. Possible discussions. Videos could help students to understand better the contents.

Optional activities about the videos "Solar thermal" *https://www.youtube.com/watch?v=FgjfJGfusdE*

, and "solar photovoltaics" https://www.youtube.com/watch?v=gl5tY5Noacc

Optional: Do the activities according to the time and the type of students in the class. I recommend doing the activities at home.

Actions/tasks: Students have to watch the video, after that, read the questions, watch the video again and answer the questions.

5th Activity:

Activity number: Activity 10

Time: 5'

Type of activity: Writing activity (answer questions).

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to write the answer of the proposed questions about the text “Solar energy”

6th Activity:

Activity number: Activity 11

Time: 5’

Type of activity: Put the pictures in the correct column or multiple choice activities.

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to put the pictures in the correct column or do a multiple choice activity, according if the picture represents a photo thermal or a photovoltaic use of solar energy.

7th Activity:

Activity number: Activity 12

Time: ***Activity to do at home***

Type of activity: Drawing activity.

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to draw three devices that work with solar energy.

8th Activity:

Activity number: -

Time: 10’

Type of activity: Reading (students)/explaining (teacher) activities. Watching a video.

Class organisation: the entire group.

Actions/Tasks: Teacher should explain (or students to read) the text “Wind energy”. Video could help students to understand better the contents.

Optional activities about the videos “Wind power” *https://www.youtube.com/watch?v=Z5c50-_hcD0*

Optional: Do the activities according to the time and the type of students in the class. I recommend doing the activities at home.

Actions/tasks: Students have to watch the video, after that, read the questions, watch the video again and answer the questions.

9th Activity:

Activity number: Activity 13

Time: 10’

Type of activity: Matching activity

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to match a text, with a title and two sentences.

4th teaching period

1st Activity:

Activity number: -

Time: 7'

Type of activity: Reading (students)/explaining (teacher) the text "Hydropower". Watching a video.

Class organisation: The entire group.

Actions/Tasks: Teacher should explain the text "Hydropower", or students read it. Solving doubts. Possible discussion. The video "Hydropower" could help students to understand better the contents.

Optional activities about the video "Hydropower" *https://www.youtube.com/watch?v=q8HmRLCgDAI*

Optional: Do the activities according to the time and the type of students in the class. I recommend doing the activities at home.

Actions/tasks: Students have to watch the video, after that, read the questions, watch the video again and answer the questions.

2nd Activity:

Activity number: Activity 14

Time: 5'

Type of activity: Matching activity.

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to match some sentences with the correct ending.

3rd Activity:

Activity number: -

Time: 7'

Type of activity: Reading (students)/ explaining (teacher) activity. Watching a video.

Class organisation: The entire class.

Actions/Tasks: Teacher should explain (or students read) the text "Wave's energy". Solving doubts. Possible discussion. The video "Wave's energy" could help the students to understand better the contents.

Optional activities about the video "Wave's energy" ***https://www.youtube.com/watch?v=sZuc4LMtHoY***

Optional: Do the activities according to the time and the type of students in the class. I recommend doing the activities at home.

Actions/tasks: Students have to watch the video, after that, read the questions, watch the video again and answer the questions.

4th Activity:

Activity number: -

Time: 7'

Type of activity: Reading (students)/explaining (teacher) activity. Watching a video.

Class organisation: The entire group.

Actions/Tasks: Teacher should explain (or students read) the text "Tidal energy". Solving doubts. Possible discussion. The video "Tidal power" could help students to understand better the contents.

Optional activities about the video "Tidal power" *https://www.youtube.com/watch?v=VkTRcTyDSyk*

Optional: Do the activities according to the time and the type of students in the class. I recommend doing the activities at home.

Actions/tasks: Students have to watch the video, after that, read the questions, watch the video again and answer the questions.

5th Activity:

Activity number: -

Time: 7'

Type of activity: Reading (students)/explaining (teacher) activity. Watching a video.

Class organisation: The entire group.

Actions/Tasks: Teacher should explain (or students read) the text "Geothermal energy". Solving doubts. Possible discussion. The video "Geothermal" could help students to understand better the contents.

Optional activities about the video "Geothermal" *https://www.youtube.com/watch?v=DFQrE91kZwk*

Optional: Do the activities according to the time and the type of students in the class. I recommend doing the activities at home.

Actions/tasks: Students have to watch the video, after that, read the questions, watch the video again and answer the questions.

6th Activity:

Activity number: Activity 15

Time: 5'

Type of activity: Writing activity

Class organisation: In pairs (optional individually)

Actions/Tasks: Students have to write the answers of some questions about the text "Geothermal energy"

7th Activity:

Activity number: -

Time: 5'

Type of activity: Reading (students)/explaining (teacher) activity.

Class organisation: The entire group.

Actions/Tasks: Teacher should explain (or students read) the text "Waste energy". Solving doubts. Possible discussion.

8th Activity:

Activity number: -

Time: 10'

Type of activity: Reading (students)/explaining (teacher) activity. Watching the videos.

Class organisation: The entire group.

Actions/Tasks: Teacher should explain (or students read) the text "Bio fuels and biomass". Solving doubts. Possible discussion. The videos "Biomass", and "Biofuels" could help students to understand better the contents.

Optional activities about the videos "Biomass" *https://www.youtube.com/watch?v=yHWcddUZ35s* and "Biofuels" *https://www.youtube.com/watch?v=ZGmwtDffc74*

Optional: Do the activities according to the time and the type of students in the class. I recommend doing the activities at home.

Actions/tasks: Students have to watch the videos, after that, read the questions, watch the videos again and answer the questions.

9th Activity:

Activity number: Activity 16.

Time: 2'

Type of activity: Matching activity.

Actions/Tasks: Students have to match pictures with the correct word (energy resource)

10th Activity:

Activity number: Activity 17.

Time: 5'

Type of activity: Matching activity.

Actions/Tasks: Students have to match the words related in both columns.

5th teaching period (Summarizing activities)

1st Activity:

Activity number: Activity 18

Time: 5'

Type of activity: Matching activity.

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to match each kind of energy with the correct sentence related to it.

2nd Activity:

Activity number: Activity 19

Time: 4'

Type of activity: Writing or multiple choice activities..

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to write (find) the name of the energy resources of the pictures.

3rd Activity:

Activity number: Activity 20

Time: 10'

Type of activity: Word search activity.

Class organisation: In pairs (optional individually).

Actions/Tasks: Students have to solve the word search. In the box with words students have to find, there are 7 renewable energy resources. 6 of them appear in the word search, the other (hydropower) should be written down.

4th Activity:

Activity number: 21

Time: 20'

Type of activity: Crosswords activity.

Class organisation: Individually.

Actions/Tasks: Students have to solve the crosswords by answering the questions proposed (about the topic).

5th Activity:

Activity number: Activity 22

Time: -

Type of activity: Fill in the gaps activity.

Class organisation: Individually.

Actions/Tasks: I propose to do this activity at home. Students have to fill in the gaps with the correct words that appear.

6th Activity:

Activity number: 23

Time: -

Type of activity: Matching activity.

Class Organisation: Individually.

Actions/Tasks: I propose to do this activity at home. Students have to match texts with the correct title and the correct picture.

7th Activity:

Activity number: 24

Time: -

Type of activity: Writing, drawing and calculating activities.

Class Organisation: Individually.

Actions/Tasks: I propose to do this activity at home. Students have to write (answer the questions related with solar energy and wind energy (possible locations in students countries and in the E.U, giving reasons)), describe how would be a world that use just renewable energy resources drawing it, and solve problems about solar and wind energy (examples and equations are given in the texts "To know more about solar energy" and "To know more about wind energy").

8th Activity:

Activity number: 25

Time: 21'

Type of activity: Explaining (teacher)/ reading (students) how to build a solar oven. Watching videos.

Class Organisation: The entire group.

Actions/Tasks: Teacher should explain (or students read) activity 24 about how to build a solar oven. Watching the videos *https://www.youtube.com/watch?v=v5CdNH3sQT0* and *https://www.youtube.com/watch?v=Uqmgu2L7kek* could help the students how to do that. Explain the pictures and the material necessary to build the solar oven. Solar oven will be made next day.

5th teaching period

1rst Activity:

Activity number:-

Time: 10'

Type of activity: Correcting activity.

Class organization: The entire group.

Actions/Tasks: Teacher should give the answers of activities 22, 23 and 24 (done at home) and correct it together.

2nd Activity:

Activity number: 25

Time 40'

Type of activity: Building activity.

Class organization: In pairs (optional individually or in groups with more students).

Actions/Tasks: Students have to build their solar oven. Teacher should give advises about the construction.

3rth Activity:

Activity number: -

Time: 10'

Type of activity: Speaking activity (review).

Class organisation: The entire group.

Actions/Tasks: Teacher should revise the entire scenario, summarizing the main contents. Solving doubts. Possible discussion.

Important: Peer and self-assessment should be done at home. In peer assessment students have to assess the partner by putting a cross in the rubric peer assessment. After that, students have to assess themselves in Self-assessment activity.

Suggestions for future development and expansion of the scenario

I suggest expanding the scenario introducing different uses and manifestations of energy (electricity, sound, nuclear energy, electromagnetism, chemical energy, etc.), and the environmental problems due to the uses of energy, the rational use/consumption of energy and resources (materials, etc.). About electricity (transport distribution, transformation, production, uses, etc.), how a power station works (different power stations), environmental problems due to the use of the energy.