

Content

- Wind mills, wind parks and wind turbines
- Interesting facts about wind turbines
- Tour of a wind turbine
- Rotor blades

Target group

- Children ages 8 to 12
- Level: A1+ / A2

Language goals

The children will be able to

- Understand a short (technical) film
- Find precise information in a text
- Read and understand a short text (an excerpt from a film script)
- Expand their passive and active vocabulary
- Understand technical terminology in context
- Understand and answer simple thematic questions
- Formulate their ideas/opinions using simple language
- Read or hear content and summarize it
- Use and develop learning strategies (take notes, make conjectures, reconstruct sequences, correctly spell words)
- Create an informational poster as a group
- Understand and follow instructions

Word bank

Windmühle (windmill), *Windpark* (wind park), *Windrad* (wind turbine), *auf dem Festland* (on solid ground), *im Meer* (in the ocean), *Strom* (electricity), *mit Strom versorgen* (to supply with electricity), *Turm* (tower), *im Turm hochfahren* (to go up the tower), *Fahrstuhl* (elevator), *Sicherheitsgeschirr* (safety harness), *dicke Leine* (thick rope), *Haken* (hook), *sich einhaken* (to hook oneself in), *Helm* (helmet), *Geländer* (railing), *Generator* (generator), *Rotorblätter* (rotor blades), *in den Wind stellen* (to face the wind), *aus den Wind stellen* (not to face the wind), *Windstärke* (wind strength), *Windrichtung* (wind direction), *messen* (to measure)

Materials

- Laptop and projector
- Audio speakers
- Blackboard and chalk/whiteboard and markers
- Magnets/blu-tack
- Brown paper
- Colored pencils/markers/crayons
- Students' portfolios

Materials for printing and/or copying

- *Windmill* picture
- *Wind park* picture
- *Wind turbines* (Windräder) quiz sheet
- Answer key for the *Wind turbines* (Windräder) quiz sheet
- Note sheet with guiding questions from the film
 - Group 1: *Up the tower*
 - Gruppe 2: *Arrived at the top*
 - Group 3: *The rotor blades*

- *Why three?* (Warum gerade drei?) film script
- *Discovering the wind turbine* (Das Windrad entdecken) worksheet
- *Discovering the wind turbine* (Das Windrad entdecken) answer key
- My word bank sheet *Wind Turbine* (Windrad)
- *Now I know* (Ich kann schon) questionnaire

Duration

3 x 45 minutes

Before the lecture/film		
Step	Content	Materials
1	<p>To introduce the theme, the instructor hands out puzzle pieces to the children, which form two pictures: old windmills and a new wind park with multiple wind turbines.</p> <p>Note: The inspiration for this theme can be a class field trip on which the children have seen wind turbines. Windy weather can also be the occasion to think about how the wind's energy can be used. Of course, this can also be inspired by other subjects, e.g., science class, physics, or literature.</p>	<p><i>Windmills</i> picture and <i>Wind park</i> picture (cut into as many pieces as there are children)</p>
2	<p>Instructor writes the words "windmill", "wind park" and "wind turbine" on the board and starts a discussion with the children: <i>Who has already seen an old windmill? Do you know what they were used for? Has anyone seen how they work? Have any of you visited a wind park or seen wind turbines? Do you know what wind turbines are used for?</i></p> <p>The children share their experiences.</p>	<p>Blackboard and chalk/whiteboard and markers</p>
3	<p>Instructor hands out a quiz sheet to the students on the topic of wind turbines. First the instructor and the children discuss the assignment to make sure that everyone understands what they are supposed to do. The instructor writes the most important words on the board: <i>electricity, solid ground, ocean, supply with electricity, to tour the wind turbine, to walk around.</i> The children mark the facts that they think are correct.</p>	<p><i>Wind turbines</i> (Windräder) quiz sheet; Blackboard and chalk/whiteboard and markers</p>
4	<p>The instructor projects the answers and they discuss the results as a group.</p> <p>Note: Further information on the topic suitable for children can be found, e.g., here: https://klexikon.zum.de/wiki/Windrad https://www.youtube.com/watch?v=k1Rw_pi2RDY http://kinderrathaus.de/windkraft?page=1</p>	<p>Answer key for the <i>Wind turbines</i> (Windräder) quiz sheet</p>

During the lecture/film		
Step	Content	Materials
5	<p>Instructor suggests that they watch a film on the topic, in which Christoph visits a wind turbine (Minute: 1:30-7:28). The instructor divides the children into three groups. Each group focuses on different information in the film. For the assignment, each group gets a sheet with guiding questions to take notes on. The instructor and the children discuss the assignment before the film starts.</p> <ul style="list-style-type: none"> - Group 1 focuses on the sequence in which Christoph travels up the tower. - Group 2 pays careful attention when Christoph is on the platform at the top of the tower and looks around. - Group 3 pays attention for information about the rotors. <p>During the film, the children take notes on the questions, and write this out in a more detailed manner after the film. The instructor helps if necessary.</p> <p>Note: If necessary, the children can watch the film a second time.</p>	<p>Laptop and projector; Audio speakers; Note sheet with guiding questions for the film Group 1: <i>Up the tower</i> Group 2: <i>Arrived at the top</i> Group 3: <i>The rotor blades</i></p>
6	<p>Instructor and children discuss the answers as a group. Then the instructor hands out the <i>Discovering the wind turbine</i> worksheet. The children work individually, but can consult the relevant "expert group" if needed.</p>	<p><i>Discovering the wind turbine</i> (Das Windrad entdecken) worksheet</p>
7	<p>Instructor asks the "expert groups" to read out the questions and corresponding answers that they were in charge of. The other children check their answers and correct them if needed.</p>	<p><i>Discovering the wind turbine</i> (Das Windrad entdecken) answer key for instructor</p>
After the lecture/film		
Step	Content	Materials
8	<p>Instructor says: <i>There is still an interesting question that we haven't answered: Why do wind turbines have three rotor blades? Did someone take note of the answer? If so, the children can summarize the answer. If not, the instructor hands out the relevant part of the film script to the children.</i></p>	<p><i>Why three?</i> (Warum gerade drei?) film scripts</p>
9	<p>Instructor and children read and interpret the text together. The instructor can use drawings or pantomime to help them understand.</p>	<p><i>Why three?</i> (Warum gerade drei?) film scripts</p>
10	<p>At the end, the group works together to create a poster on a large piece of brown paper with all the information that they learned about wind turbines. This should include pictures (drawings) and text. The finished poster is hung up in the classroom or in the hallway. The instructor helps the children if needed.</p>	<p>Magnets/blu-tack; Brown paper; Colored pencils/markers/crayons</p>

11	Once the joint poster project is finished, the instructor hands out the <i>Wind Turbine (Windrad)</i> word bank sheet. The children copy down the words and expressions that they find important or interesting from the poster onto their sheets.	My word bank sheet <i>Wind Turbine (Windrad)</i>
12	Instructor and children end the unit with a reflection round, in which they discuss what they have learned. Each child then fills out the <i>Now I know (Ich kann schon)</i> questionnaire to find out whether they have achieved the learning objectives. Instructor also gives feedback on student performance.	<i>Now I know (Ich kann schon)</i> questionnaire
13	The children hold onto the following in their portfolios: <ul style="list-style-type: none"> - <i>Wind turbines (Windräder)</i> quiz sheet - <i>Discovering the wind turbine</i> worksheet - My word bank sheet <i>Wind Turbine (Windrad)</i> - <i>Now I know (Ich kann schon)</i> questionnaire 	Portfolios

Further ideas for subject matter or CLIL teaching (natural sciences, physics):

- Research project on the topic of "wind power" - uses, history, ideas for the future - followed by poster presentations or PPTs.
- Research project on old windmills - Poster presentation or PPTs; possibly also a photo exhibit
- Learn about the old windmill language - develop new ideas for windmill signals
- Research project on renewable energy - working across disciplines
- Visit to a wind park/wind turbine - conduct interviews with experts

Suggestion for the children at the end of the learning scenario

At the very end, the children gather around a computer or the instructor projects a computer desktop onto a screen. They look at the home page of the German Digital Kinderuniversität together. The instructor explains to the children that they now have completed the *Wind turbine (Windrad)* lecture in the *Technology* faculty together and draws their attention to the fact that there are many more interesting lectures in this faculty and in the *Humankind* and *Nature* faculties.

The instructor and the children click together on the At Home link and discover how the website works. As an example, the instructor logs in and goes to the lecture that they just worked through.

The instructor shows the children that the lecture begins with an introduction by Professor Einstein and Ms. Schlau and that their work is supported by Jowo and Christoph, the field researcher. Professor Einstein and Ms. Schlau also wrap up all the lectures and thereby frame the work on each theme.

The instructor explains to the children that they can re-watch the film at home and can even set the subtitles to German or English. That way, they can "catch" key words while watching and use these to collect points and solve three exercises and a bonus exercise on the film. The children can also get help from their parents or grandparents, from registering to solving the exercises. The whole family can have fun learning and everyone gradually becomes a professor at the Kinderuni.