

## Content

- Types of trees
- Which wood crackles the best?
- Why does wood crackle when it burns?

## Target group

- Children ages 10 to 12
- Level: A1+/A2

## Language goals

The children will be able to

- Understand a short (technical) film
- Find precise information in a text
- Expand their passive and active vocabulary
- Understand technical terminology in context
- Understand and answer simple thematic questions
- Express their ideas/opinions using simple language
- Match pictures in a theme
- Memorize short related sentences
- Complete a fill-in-the-blank
- Use and develop learning strategies (use pictures as a learning tool, take notes, make conjectures, reconstruct processes, correctly spell words)
- Prepare and hold a short presentation for the group
- Understand and follow instructions

## Word bank

*Kamin* (fireplace), *Feuer* (fire), *Kaminfeuer* (long-lasting fire), *gemütlich* (comfortable), *Feuerknistern* (crackling fire), *Brennholz* (firewood), *das Holz brennt* (the wood burns), *das Holz knistert* (the wood crackles), *Laubholz* (wood from deciduous trees), *Nadelholz* (wood from conifers), *Lärche* (larch), *Buche* (beech), *Birke* (birch), *Eiche* (oak), *Fichte* (spruce), *gut/besser/am besten* (good/better/best), *Baum/Bäume* (tree/trees), *Rinde* (bark), *Blatt/Blätter* (leaf/leaves), *Wasserdampf* (steam), *Dampfdruck* (pressure from steam), *platzen* (to burst), *Wasserröhren* (water tubes), *Explosion* (explosion), *Harz* (resin)

## Materials

- Laptop and projector
- Audio speakers
- Blackboard and chalk/whiteboard and markers
- Magnets/blu-tack
- Scissors
- Glue
- Students' portfolios

## Materials for printing and/or copying

- Pictures *Wood from conifers*, *wood from deciduous trees*, *larch*, *beech*, *birch*, *oak*, *spruce*
- *Trees* (Bäume) cutout template
- *Trees* (Bäume) answer key
- *Trees* (Bäume) template for gluing
- *Crackling fire* (Feuerknistern) worksheet
- *Crackling fire* (Feuerknistern) fill-in-the-blank

- *Crackling fire* (Feuerknistern) answer key
- Picture *Christoph solves the problem* (Christoph löst das Problem)
- *Crackling fire* (Feuerknistern) word bank
- My word bank sheet *Crackling fire* (Feuerknistern)
- *Now I know* (Ich kann schon) questionnaire

### Material for download

- *Crackling fire* sound: <https://goo.gl/336uiV>
- *Fire in the fireplace* picture: <https://goo.gl/UTCMcU>

### Duration

3x45 minutes

Before the lecture/film		
Step	Content	Materials
1	Instructor welcomes the children and turns on the <i>crackling fire</i> at the following web page: <a href="https://goo.gl/336uiV">https://goo.gl/336uiV</a> He or she asks the children to listen and share what it is a sound of: <i>fire, crackling fire, burning wood</i> Note: The occasion for the treatment of the topic can be a cold winter's day on which one yearns for warmth and comfort.	Laptop; Audio speakers Internet (YouTube)
2	Instructor says: <i>Fire can be both dangerous and pleasant. Where can one enjoy a fire? When is fire nice and pleasant?</i> Instructor helps the children to formulate their ideas and helps to focus the discussion with an image that he or she projects, the ' <i>fire in the fireplace</i> ': <a href="https://goo.gl/UTCMcU">https://goo.gl/UTCMcU</a> Instructor then says: <i>Close your eyes and imagine that those are your feet. You're listening to music, you're reading, you're talking to friends. You feel comfortable, everything is very pleasant.</i>	Laptop and projector; Audio speakers;
3	Instructor summarizes: <i>We heard how wood burns in a fireplace and how the fire crackles. We imagined how pleasant it is to sit or to lie in front of a fireplace, reading a book or listening to music.</i> Instructor writes the words <i>fireplace, fire, crackling fire, the wood burns, the wood crackles</i> on the board.	Blackboard and chalk/whiteboard and markers
4	Then the instructor continues: <i>Do you think that every type of wood crackles just as loudly?</i> The children express their opinions.  Instructor says: <i>That is exactly what Christoph wanted to know. Let's watch the film so we can find out what he discovered</i> (Minute: 1:08-4:37).	Laptop and projector; Audio speakers;

During the lecture/film		
Step	Content	Materials
5	The children watch the film sequence and summarize the answer: <i>Not every type of wood crackles equally. The wood from conifers crackles better than the wood from deciduous trees. Larch wood crackles the best.</i> During the discussion, the instructor writes the words <i>conifers</i> , <i>deciduous trees</i> and <i>larch</i> on the board.	Blackboard and chalk/whiteboard and markers
6	Instructor hangs the matching pictures under the words and introduces the other types of trees that are mentioned in the film: <i>beech</i> , <i>birch</i> , <i>oak</i> and <i>spruce</i> . These new pictures and words are also added to the board.	Blackboard and chalk/whiteboard and markers; <i>Conifer</i> , <i>deciduous tree</i> , <i>larch</i> , <i>beech</i> , <i>birch</i> , <i>oak</i> and <i>spruce</i> images; Magnets/blu-tack;
7	Instructor hands out a <i>Trees</i> (Bäume) cutout template to each child. The children cut out the 20 pictures. They watch the film sequence they just saw one more time (Minute: 1:08-4:37) and match the pictures accordingly.	<i>Trees</i> (Bäume) cutout template; Scissors
8	They check their answers with the help of the answer key, which the instructor projects. The children glue the matched pictures on the <i>Trees</i> template for gluing, which the instructor hands out to them.  Note: The instructor can set up additional sets of pictures that the children can use to play memory in small groups.	<i>Trees</i> (Bäume) answer key; <i>Trees</i> (Bäume) template for gluing; Glue
9	Instructor says: <i>Now we know that not every type of wood crackles equally loudly. But why does wood crackle in general? Do you have any ideas?</i> The children make guesses.	
10	Instructor suggests that they watch the next film sequence (Minute: 4:37-7:26). The children then discuss with each other what they understood.	Laptop and projector; Audio speakers;
11	Instructor hands each child a <i>Crackling fire</i> (Feuerknistern) worksheet with sentences explaining the phenomenon. The children their suggestions for the correct order in small groups. At the end they compare their answers as a group.	<i>Crackling fire</i> (Feuerknistern) worksheet
12	Instructor projects the answers on the board and reads the sentences. The children repeat them as a group. The instructor asks the children to memorize the sentences.	<i>Crackling fire</i> (Feuerknistern) answer key; Laptop and projector

13	Instructor hands out the <i>Crackling fire</i> (Feuerknistern) fill-in-the-blank to the children. The children work individually and then compare their answers with the <i>Crackling fire</i> (Feuerknistern) answer key, which the instructor projects on the board.	<i>Crackling fire</i> (Feuerknistern) fill-in-the-blank; <i>Crackling fire</i> (Feuerknistern) answer key												
14	Instructor asks: <i>So now we know that not every type of wood that burns well, also crackles well. What do you think Christoph does so that he can always hear the fire crackling?</i>  Instructor shows the children the picture "Christoph solves the problem." The children think of possible explanations. The instructor then shows the final film sequence (Minute: 7:26-8:56). The children test out their guesses.	Laptop and projector; Audio speakers; Picture "Christoph solves the problem"												
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### Further ideas for subject matter or CLIL teaching (natural sciences, literature):

- Literature project on the James Krüss poem „Das Feuer“, focusing on reciting the poem with its many onomatopoeic words - <https://goo.gl/zy9Lxi>
- Fires are both useful and dangerous - Research project with poster presentations or PowerPoint presentations
- Visit to a fire department
- School-wide event with a bonfire (optionally together with the literature project)

### 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 *Crackling Fire* (Feuerknistern) lecture in the *Nature* faculty together and draws their attention to the fact that there are many more interesting lectures in this faculty and in the *Technology* and *Humankind* 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. Schläu and that their work is supported by Jowo and Christoph, the field researcher. Professor Einstein and Ms. Schläu 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.