

Content

- How shadows form
- Shadow games and shadow theater

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
- Expand their passive and active vocabulary
- Understand technical terminology in context
- Understand and answer simple thematic questions
- Express likes and dislikes
- Express opinions
- Carry out simple experiments and formulate the results with simple language
- Use and develop learning strategies (make conjectures, recreate processes, correctly spell words)
- Understand and follow instructions

Word bank

Schatten (shadow), *Schattenspiel* (shadow game), *Schattentheater* (shadow theater), *Leinwand* (screen), *Licht* (light), *Lichtstrahlen* (rays of light), *Lichtquelle* (light source), *nah* (near), *weit* (far), *näher zu der Lichtquelle* (closer to the light source), *weiter von der Lichtquelle* (farther from the light source), *der Schatten wird größer* (the shadow becomes larger), *der Schatten wird kleiner* (the shadow becomes smaller), *genial* (great), *Schauspieler* (actor), *Ratespiel* (guessing game)

Materials

- Laptop and projector
- Audio speakers
- Blackboard and chalk/whiteboard and markers
- Flashlight
- Students' portfolios

Materials for printing and/or copying

- *Shadow animals* (Schattentiere) worksheet
- *Shadow animals* (Schattentiere) answer key
- *Shadow games* (Schattenspiele) worksheet
- *Shadow games* (Schattenspiele) answer key
- My word bank sheet *Shadow games* (Schattenspiele)
- *Now I know* (Ich kann schon) questionnaire

Duration

2x45 minutes

Before the lecture/film		
Step	Content	Materials
1	<p>Instructor invites the students to a special theater experience, saying: <i>I'm sure you like to go to the theater. Who has already seen something at the theater?</i> The children share their experiences at the theater. Instructor says: <i>Now we're going to bring a very special theater into our classroom: a shadow theater. Lean back and enjoy the show.</i> (https://www.youtube.com/watch?v=D-dwDV8x0vVI)</p> <p>Note: Here the word shadow theater (Schattentheater) is used, but not explained. Once the children have seen the YouTube video, they will come up with the solution themselves.</p>	Laptop and projector; Audio speakers; Internet (YouTube)
2	<p>After watching the video the children talk about whether or not they liked the show and why.</p> <p>Note: Instructor provides the children with examples of how to express their likes and dislikes. Tip: At good opportunities the instructor and the children collect different useful expressions. They write them onto large pieces of brown paper and add new expressions as they learn them. The lists are hung up on the wall of the classrom so that the children can always have access to them.</p>	
3	<p>The instructor writes the words <i>Shadow theater</i> (Schattentheater) on the board and asks: <i>Did you see how shadow theater is done?</i> The children gather their ideas. The instructor helps them to formulate them. <i>The audience sits in front of a screen. The actors are behind the screen. Lamps are behind the actors (or spotlights in a theater), and they light up the actors and the screen.</i></p> <p>To illustrate this, the instructor puts a picture on the wall/board like the following example: http://www.schattentheater.de/files/deutsch/schatten/imgs/Schattenraum_1.jpg</p> <p>While explaining, the instructor adds words to the picture: <i>audience, actor, screen, light source, rays of light</i></p> <p>Instructor shows the sequence from the YouTube video again where the dancing scene switches from the screen to the shadow theater.</p>	Blackboard and chalk/whiteboard and markers
4	<p>The picture on the board helps the children to answer the next question: <i>How do shadows form?</i> The children formulate the answer with the help of the instructor: <i>When someone or something stands in the path of the rays of light, a shadow forms.</i> Instructor writes the word <i>shadow</i> (Schatten) on the board as well.</p> <p>If the sun is shining into the classroom, one can directly experience how shadows form. If it isn't sunny, the sun can be replaced by a flashlight; the room just needs to be darkened.</p>	Flashlight

During the lecture/film		
Step	Content	Materials
5	Instructor suggests watching the <i>Shadow games</i> (Schattenspiele) film and says: <i>Please return to your seats Now we're going to watch a film in which our field researcher, Christoph, shows how shadow games work.</i> (Minute 1:38-4:00)	
6	Instructor asks: <i>Can you remember which animals were named in the film? Please underline them on the worksheet.</i> The students check their answers using the answer key, which the instructor projects.	<i>Shadow animals</i> (Schattentiere) worksheet <i>Shadow animals</i> (Schattentiere) answer key
7	Instructor asks: <i>Does anyone know how to form shadow animals with their hand like in the film?</i> Instructor turns the projector on and the children try it out.	
After the lecture/film		
Step	Content	Materials
8	Instructor divides the children into 4 groups and gives each group a flashlight. Then, the instructor projects simple shadow animals on the wall/board: (http://www.mamiweb.de/magazinbilder/con-tainer/038/38548/schattenfiguren-m.jpg?t=1351458015). The children practice in groups. At the end each group presents what they have worked on.	Laptop and projector
9	For the presentation the children also practice how to make the shadow figures smaller and larger and with the help of the instructor come to the conclusion that: <i>If one stands close to the light source, the shadow figure is small. If one goes farther away, the figure becomes larger.</i>	
10	Instructor asks the children to return to their seats and hands out a worksheet to each student. The children work on the worksheet first individually, and then they discuss their answers in pairs. Finally, they check their work with the help of the answer key, which the instructor hangs/places in multiple locations in the classroom.	<i>Shadow games</i> (Schattenspiele) worksheet <i>Shadow games</i> (Schattenspiele) answer key
11	Instructor hands out the word bank sheet <i>Shadow games</i> (Schattenspiele) to the children. They are instructed to transfer the words and expressions that they just worked on for the <i>Shadow games</i> (Schattenspiele) worksheet that they found important and interesting and would like to learn.	My word bank sheet <i>Shadow games</i> (Schattenspiele)

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</i> (Ich kann schon) questionnaire to find out whether they have achieved the learning objectives. Instructor also gives feedback on student performance.	<i>Now I know</i> (Ich kann schon) questionnaire
13	The children hold onto the following in their portfolios: <ul style="list-style-type: none"> - <i>Shadow games</i> (Schattenspiele) worksheet - My word bank sheet <i>Shadow games</i> (Schattenspiele) - <i>Now I know</i> (Ich kann schon) questionnaire 	Portfolios

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

- Shadow theater project (<https://www.youtube.com/watch?v=ffBG0y8fPI4>)
- Research project: The history of shadow theater (<http://www.schattentheater.de/files/deutsch/geschichte/geschichte.php>)
- Shadow picture project: A photo is taken of each child's shadow and assembled into an exhibition. The other children at the school can guess which shadow belongs to whom.
- Experiment: How shadows change as the sun moves across the sky.
- Make a sun dial (<https://www.nela-forscht.de/2011/07/07/schatten-durch-sonne/>)

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 *Shadow games* (Schattenspiele) lecture in the *Humankind* faculty together and draws their attention to the fact that there are many more interesting lectures in this faculty and in the *Technology* 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.