

We are in the geography course in a 11th grade class (16- and 17-year-old students). The topic of today's lesson is fracking for natural gas and possible scenarios for dealing with this issue in Germany.

Kay and Lena are sitting in the third row, their classmates Jona and Yasmin have turned to face them. They've just been given the task of identifying the worst-case and best-case scenarios for fracking in Germany in 2030. They only have a limited amount of time; next week, they must apply the scenario method again, on their own, and receive a grade. The learners work quietly, with concentration, investigating arguments. But Lena seems unsettled. She looks around the classroom, then back at her worksheet. Finally, she asks the others. They interrupt their work and listen to her. Jona and Yasmin, who have been confidently going about their task so far, stop and put their pencils down. After a short pause, they answer and show with their facial expressions that they don't know an answer. Kay also seems unsure now. He looks around the room, apparently

to check what the others are doing. Finally, Lena speaks up and the question is addressed to the teacher, half aloud. "What are the best-case and worst-case scenarios? So, is it not necessary for them to be predefined?" The teacher reacts hesitantly, moves towards the third row, then distances herself again. Finally, she answers half aloud, with a questioning undertone: "Well, we are asking what is particularly sustainable. So, is it sustainable if fracking is carried out or not?" Now the classmates are also following the conversation attentively. The teacher continues without waiting for an answer from the students: "So the best-case scenario is that no fracking is carried out in Germany." Lena thinks about it, picks up her pen and continues working.

TEACHER'S CONSIDERATION BEFORE LESSON

"A lot of content is planned for this lesson - fracking, sustainability and the scenario method. But we'll manage it all. [...] It's difficult to consider all perspectives when dealing with issues like this. That's why I've prepared a worksheet for the scenario where the individual dimensions are illustrated. Learners can use it to work out the best-case and worst-case scenarios. [...]"

EXTRACT FROM THE → LESSON PLAN

10'	Work with a partner	<p>Task: Create a best-case and worst-case scenario for the year 2030 from the results. Write the scenarios next to each other in a table. The following questions can help you:</p> <ol style="list-style-type: none"> 1. Under what conditions does the scenario occur? 2. What could happen in the best-case scenario? What in the worst-case scenario? 3. Have I considered all dimensions of sustainability?
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→ **PREVIOUS OBSERVATION IN THE CLASSROOM**
Before the learners start working on the scenarios, the teacher repeats the concept of sustainability. The pillar models of sustainability and the sustainability square are used here, while contributions from the learners are also incorporated.

→ **WORKSHEET FOR SCENARIO WITH ANSWERS OF THE STUDENTS**

Best-case scenario	factors	Worst-case scenario
<i>climate goals are met, political stability</i>	political	<i>return of populist forces, no regulations</i>
<i>environmental impact is avoided</i>	ecological	<i>serious environmental damage</i>
<i>social consensus</i>	social	<i>protests</i>
<i>positive effects through security of energy supply through expansions of renewable energies</i>	economical	<i>high costs due to damage on environment and health</i>

TEACHER'S REFLECTIONS AFTER THE LESSON

"There was a moment in the lesson when I was really unsure. One student asked what the best-case scenario was. But in terms of sustainability, the best-case scenario is when we don't need fracking and can be supplied entirely by green energy. So, I think I reacted well in this situation."