

- MS. SCHLAU:** Welcome, students, thank you for joining us for today's lecture. Today we join field researcher Christoph to investigate where the noise in a shell comes from. For this we need absolute silence. So shhh!
- PROFESSOR EINSTEIN:** Ms. Schlau? What are you doing here? Today is Tuesday – your day off. You should relax, go to the beach or the countryside!
- MS. SCHLAU:** My dear Professor, first, you're interrupting my lecture, second, I don't need to relax, and third, today is Wednesday!
- PROFESSOR EINSTEIN:** No.
- MS. SCHLAU:** Yes!
- PROFESSOR EINSTEIN:** Oh... then it's my day off.
- MS. SCHLAU:** You got it.
- PROFESSOR EINSTEIN:** Hooray, I can go surfing or bungee jumping or parachuting! Haha!
- MS. SCHLAU:** Do whatever you like. But right now I need silence – the lecture has begun.
- PROFESSOR EINSTEIN:** Oh, of course. I don't want to disturb. Don't disturb. Shhh, Ms. Schlau, very quiet. Ummm...what's it about?
- MS. SCHLAU:** We're answering the question on where the sound in a seashell comes from.
- PROFESSOR EINSTEIN:** Oh! Yes, that is, yes, that is very interesting. Do you think I could, that is.... if I'm very quiet...perhaps?
- MS. SCHLAU:** Listen? Of course.
- PROFESSOR EINSTEIN:** Thank you. But really nowshhh! For heaven's sake, who is disturbing scientific progress? The next person who makes a sound will have to do 10 push-ups! Understood? Proceed.
- MS. SCHLAU:** Thank you. JOWO, start the film, please!
Field researcher Christoph has discovered a beautiful **seashell (MUSCHEL)** in a **shop window (SCHAUFENSTER)**. Scientifically speaking, it is a snail shell, but most people call it a seashell. He heard that these seashells have something very special. You can **hear (HÖREN)** the sound of the ocean in them.
- PROFESSOR EINSTEIN:** Really?

- MS. SCHLAU:** Yes, let's try it. Indeed, there's a sound like the **ocean (MEER)**.
- PROFESSOR EINSTEIN:** But there isn't an ocean inside or any device - it's completely empty. And it appears to be made of clay or ceramic, like my teacup, ha. But where does the sound of the ocean come from? Strange.
- MS. SCHLAU:** Yes, curious, and that's why Christoph decided to ask someone who is in the know. So off to a sound studio. Ralph takes Christoph into the recording room. It's very quiet inside. No **sounds (TON)** can come in from the outside. They even have double doors. Christoph gives it a try and can't hear anything.
- PROFESSOR EINSTEIN:** Is the shell broken?
- MS. SCHLAU:** No. There's nothing to hear. He gives Ralph a sign. Ralph can not only hear the sound on his mixer, but also see it. That's what it looks like. Now the shell: no! The **microphone (MIKROFON)** doesn't hear anything either. Now he opens the window. There's also a double window. And now the shell works again. Christoph hears the noise. Now he gets the microphone. Let's see what it hears!
- PROFESSOR EINSTEIN:** **Window (FENSTER)** closed: nothing to hear. Window open and closed again. And open again. When Christoph takes the shell towards the microphone and back again, you can see how the sound changes. So, the shell is changing the sound of the traffic outside. And if you don't realize it, you could imagine that these are ocean sounds. But now Christoph knows that, in a city with traffic, what he hears in the shell is just the altered sound of the traffic.
- MS. SCHLAU:** Exactly, Professor. And when he listens to his shell here in the **woods (WALD)** by a **stream (BACH)**, he hears a modified sound of the **leaves (BLATT)** and the stream. But here it's of course much easier to imagine that he's at the ocean listening to the waves.
- PROFESSOR EINSTEIN:** Oh, I want to hear the ocean, too! Can I? Does one of you happen to have a sea shell with you? Or maybe a snail shell?
- MS. SCHLAU:** Not necessary, Professor. You can also hear the sound by using both of your hands to form a hollow space and then holding them to your ear. JOWO?
- PROFESSOR EINSTEIN:** Ah, very good. Then let's all be silent. Shhh. What is that? Again?! I believe I said...

MS. SCHLAU:

I think it's for you! A Mrs. Einstein!

PROFESSOR EINSTEIN:

What? Oh, how embarrassing. I completely forgot to turn it off! Turn it off, just please turn it off. What? Uh...you... Don't tell me that I have to ...because of the ringing...do push-ups? I said earlier... well... I think this can happen to anybody ... Ah, OK...well... if I must.

MS. SCHLAU:

And one and two and three and four... and five and six and seven... and eight and nine!