

**Lesson:** Introduction to Mixtures and Solutions  
**Teacher:** Adelyn Lyon  
**Video URL:** [http://education.ucsc.edu/ellisa/case\\_studies/separating\\_mixtures\\_intro.html](http://education.ucsc.edu/ellisa/case_studies/separating_mixtures_intro.html)  
**Clip:** Part 1

**Abbreviations:**

T = Teacher S = Student Ss = Students

1 [00:00:00]  
2 T: Okay! So we are starting a brand new unit. Raise your hand if you remember what we are  
3 learning about for the third trimester group.  
4 T: Everyone say “separating”.  
5 Ss: Separating!  
6 T: Mixtures!  
7 Ss: Mixtures  
8 T: That’s what we’re learning about, but we’re learning about a bigger topic and it’s one we’ve  
9 been looking forward to. So we’re looking forward to it because it means we’re almost middle  
10 schoolers because only almost middle schoolers get to study this subject. Aliva what is it? We  
11 are learning about chemistry! What are we learning about?  
12 Ss: Chemistry!  
13 T: And we are so excited. Raise your hand if you have any ideas of what chemistry is about  
14 because we haven’t talked about it. Anyone have any ideas going in what you think chemistry  
15 might be? Rodney?  
16 S: [???] Liquid?  
17 T: Okay, that’s one idea. Using liquids. So chemistry might have something to do with using  
18 liquids. Ricky?  
19 S: Using chemicals?  
20 T: Using chemicals. Oh, I like how you—chemicals, chemistry, those are similar sounding words.  
21 Victor.  
22 S: Uh, isn’t it when you like study matter?  
23 T: That is right. That’s exactly what it is.  
24 [00:01:20]  
25 T: So chemistry. And um, Mildred, help us out here. How do we say chemistry?  
26 S: Química.  
27 T: Everyone say química.  
28 Ss: Química!  
29 T: So chemistry is the branch of science that deals with the study of matter. Go ahead and tell  
30 your table what chemistry is.  
31 Ss: *[students repeating the definition of chemistry to tablemates]*  
32 T: So, crazy enough, but we’ve actually been doing chemistry, but it’s been sort of a secret.  
33 When we were cellular respiration with the yeast and we had that reaction where we made  
34 carbon dioxide? That was actually chemistry.

35 Ss: Oh!

36 T: I know. We were studying the living systems part and now we can study the chemical part. So

37 why did that yeast react with the sugar and the warm water that way? Yeah, Brook?

38 [00:02:09]

39 S: Because on the—oh when we add sugar?

40 T: Okay, so the sugar part has something to do with what produces that chemical reaction. But

41 really, in order to understand this, we need to know about this word: *matter*. Everyone, say

42 matter.

43 Ss: Matter!

44 T: So this is not—this basically means it has mass that occupies space. It is something that exists.

45 And atoms and molecules, we'll learn about later. But we just want to know it has mass and it

46 occupies space. So Leo right here, he's an example of matter. He's solid matter. So, and I know

47 Leo is an example of matter because Leo has mass, so he has a weight and he occupies space—

48 he takes up space. I know this pen is an example of matter because it has mass, some weight to it,

49 and it occupies space. I know this water is matter. How do we know this water is matter?

50 Desiree?

51 S: It can be liquid.

52 [00:03:09]

53 T: Okay, it's a kind of liquid. You can see that up here. And it has mass and occupies space.

54 Anyone think of something else that you think might be matter. Rojay? [???

55 S: [???

56 T: Okay how do you know that people is matter? Can you use the frame that we have right here?

57 S: I know people is matter because [???

58 T: Thumbs up if you think you know an example of matter somewhere here or something you

59 have at home? Okay. I'd like you—if you're a three person group, you are all sharing—when I

60 say peer share, it means group share so raise your hand if you're a three person group? Matt, so

61 are you just going to pair share with the person next to you?

62 S: mmm [noise for "no"]

63 T: No. Please share something that you know that's an example of matter. Okay, go.

64 Ss: [students engage in discussions]

65 T: And how you know it's matter.

66 Ss: [students engage in discussion]

67 T: Four...three...two...one...zero.

68 [00:04:16]

69 T: So basically everything around us is matter. And chemistry is studying all the chemical

70 building blocks that make up everything around us, how they react to each other and how you

71 can break it down. And we can do some really cool stuff with that. So to study matter we are

72 going to doing these three things. Let's read the first thing we're going to do together. So I need

73 everyone's eyes up here, ready to go. In three...—everyone say observations!

74 Ss: Observations

75 T: Materials  
76 Ss: Materials  
77 T: Okay, let's read it on three. One...two...three.  
78 Ss: Make observations about three materials when they are dry.  
79 T: So that's the first thing we're going to do today. We're going to have three mystery  
80 substances that we'll be learning about. And we're going to look at them. We're going to make  
81 *observations* about them. Then we're going to do the second thing. Let's read it. Ready, set, go.  
82 Ss: Make observations about these materials when you mix them with water.  
83 [00:05:20]  
84 T: So this mixing idea is something we're really going to be focusing on today. And what are we  
85 going to mix them with?  
86 Ss: Water.  
87 T: Water! We're mixing them with water. That's the other substance we're using. And then the  
88 third thing, which is, I think, the most exciting part, but this is pretty exciting too. Let's read it.  
89 Ready, set, go.  
90 Ss: Try to separate the mixture using filters.  
91 T: Okay. And there's a reason we're doing all these things. We have a goal—a challenge that's  
92 been posed to us. A question that we're trying to answer. And this is our question. When I put it  
93 up, I would like you to read it to your group and think about how we might kind of solve it.  
94 We're not only going to share our ideas, but I want you to start thinking about how we might try  
95 to figure out the answer to this question. You guys ready?  
96 Ss: Yes  
97 [00:06:07]  
98 Ss: How do you separate mixtures based on the properties of different types of matter?  
99 T: Okay. Raise your hand if there's any words up here that you're not sure about. Okay, we're a  
100 pretty confident class. So thumbs up if you feel like you know all these words up here, even  
101 those bolded words there? Okay. Well we're going to find out because these are our academic  
102 vocabulary words. Everyone point to the wall over there. Who can tell me what is new on that  
103 wall since the last time you saw it? Um...James.  
104 S: Uh...the pictures and what they are.  
105 T: Okay, what do you think those pictures are of?  
106 S: I think the pictures are of what the pic—what are in—how do you—what's in the question.  
107 T: Okay, what's in that question...breaking down that question. That's exactly right. And that's  
108 what we're going to be doing right now. So...we are going to get started with the word *property*.  
109 Everyone say property.  
110 Ss: Property!  
111 [00:07:07]  
112 T: So a property...raise your hand if you've heard that word used before. You've heard *property*.  
113 Who can use that word? I see a lot of hands. I'm going to pull sticks. Um, Desiree, have you  
114 heard that word before?

115 S: Yeah  
116 T: How have you heard *property*?  
117 S: Um, belonging to something.  
118 T: Yeah that's what I usually think of too. Like "hey, that's my property". Has anyone ever said  
119 that before to somebody? They try to grab something. "That's mine. That's my property!" That's  
120 one meaning of this word. But today, as chemists, because that's what we are, chemists, today  
121 studying chemistry, we're thinking of it as characteristics or way to describe it. So this is a  
122 substance called magnesium. Everybody say *magnesium*.  
123 Ss: Magnesium.  
124 T: So it's this really cool substance. It has some special properties or characteristics. So it can do  
125 really cool things like it can burn. If you set it on fire, it'll burn, which is pretty cool. That's a  
126 property—it's a characteristic of it. Makes it unique, special. It can also conduct electricity. Like  
127 I know if fourth grade you studied currents, right? And how electricity travels. And it can travel  
128 to magnesium.  
129 [00:08:13]  
130 T: And then these are some sort of general characteristics we have. What is the color of  
131 magnesium? Go ahead and tell your table. What is the color?  
132 Ss: Gray | Blue [??]  
133 T: Oh, I'm loving those complete sentences. What about the textures? That's how it feels. You  
134 can't feel this, but how do you think this might feel? Go ahead and tell your table.  
135 Ss: *[students all talking at once]*  
136 T: And what about the shape? What is the shape?  
137 Ss: *[students all talking at once]*  
138 T: So by using properties, we can let someone else know, either with chemistry or something  
139 else, how to describe something. So if I want to describe magnesium, I can say magnesium is  
140 gray in color, it feels rough and it has jagged shape and those are some of the properties of  
141 magnesium. Go ahead and try that sentence frame and say it to a partner.  
142 Ss: Magnesium is gray in color, feels rough and has a jagged shape. These are some of the  
143 properties of magnesium.  
144 [00:09:21]  
145 T: Okay, and we're going to be using that frame later next week to review some of the properties  
146 of the really cool substances we're studying today. So, now we get to go in with mixtures. So, I  
147 have brought in one of my favorite kinds of mixtures to explain it. And somebody in this class  
148 helped me bring this mixture. This is the mixture I have in the morning. Raise your hand if you  
149 also make this mixture. Sometimes, in the morning. I have my bowl of milk and I have some  
150 cereal. No? No one has cereal for breakfast?  
151 Ss: *[students mumble something]*  
152 T: So, raise your hand if you had a mixture for breakfast this morning. Okay, so a mixture is  
153 anytime that I mix two or more materials of different properties. So who can tell me a property  
154 of Captain Crunch? Yes.

155 [00:10:13]  
156 S: [???]  
157 T: Okay, what's a property of it? So like the color or texture...what do you think? What is a  
158 property of Captain Crunch? What do you think? You look at it. What do you think? Go ahead.  
159 Tell your table. What's a property of it?  
160 Ss: Colorful | Pretty rough [*students discussing and sharing*]  
161 T: What's a property of it?  
162 S: Crunchy, crispy, small and [???]  
163 T: Okay. And back to those learning bodies. And then here just shout out, because I'm not going  
164 to—I don't want to spill it. What are some properties of milk? What are some properties or  
165 characteristics that you—if someone didn't know what milk is, how could you describe it to  
166 them using adjectives? Max?  
167 S: The way I described it is that it's a liquid.  
168 [00:11:0]  
169 T: A liquid. Excellent. That's actually one of those categories of matter that we had from the  
170 beginning. What is another word I could use to *describe* milk? Axel?  
171 S: White.  
172 T: It's white. The color of milk is white. And...Victor?  
173 S: [???] it  
174 T: Did you lose it? What about the like...we talked about, um, like this is probably really dry  
175 substance, a characteristic of it. What do you think about milk? Jaden?  
176 S: It's very wet?  
177 T: Yeah, it's pretty wet. It's very moist. So, these are two materials. And they have different  
178 properties. Alright. Milk is not all different colors or crunchy. Captain Crunch is not liquid. That  
179 would be an interesting liquid. They have their different properties. So here's a question. If I  
180 have water from the sink and I mix with it, water, from the sink, did I mix things with different  
181 properties?  
182 Ss: No  
183 T: I used two cups of water. They had the same properties. What's a property of water? Go ahead  
184 and tell your table. What's a property of water?  
185 [00:12:13]  
186 Ss: Clear | Wet [*students all talking at once*]  
187 T: ...two...one. Okay. Did both cups of water have the same properties?  
188 Ss: No...Yes  
189 T: Ye—let's look. I can put it even back because I know they have the same properties. So if I  
190 put it back, we look, do these look the same?  
191 Ss: Yes  
192 T: If I feel them, are they going to feel the same?  
193 Ss: Yes

194 T: Okay, let's see what else I have. The shape of them...they both sort of fit the shape of the  
195 container they're in. Do they both fit in the shape of the container they're in?  
196 Ss: Yes  
197 T: They have the same properties so even by putting them together, I'm not actually making a  
198 mixture because they don't have different properties. I want you to think—can you guys think of  
199 a mixture you might make at home? What's something you like to mix together? Go ahead and  
200 think for just a second and thumbs up when you have an idea of a mixture you like to make at  
201 home. So any two things you like to mix together. Go ahead and share with your table.  
202 [00:13:13]  
203 Ss: *[students all talking at once]*  
204 T: *[talking to students]* Oh good Excellent. What do you mix the bagel with? That's a popular  
205 one.  
206 S: Putting donuts in coffee!  
207 T: You too, donu... you mix it together, do you ever mix it together, with the donut in the  
208 coffee? I don't know, I don't know...  
209 Ss: *[students all talking at once]*  
210 T: Three, two, one. Monta Loma!  
211 Ss: Leopard leaders.  
212 T: So when I was talking to Dylan he said something really interesting. He was talking about  
213 pancakes. And we starting talking about how pancakes, even though, when we look at a pancake  
214 it looks all the same, it's actually a mixture because you have to mix like—Axel, I noticed,  
215 because he's really good at cooking pancakes, he mixes together the flour, and the sugar and  
216 eggs and other things like that. It's a mixture because you're mixing in all these things with  
217 different properties.  
218 [00:14:39]  
219 T: Okay. Even in class, people brought some of their mixtures [???], right? We've got scissors,  
220 we have pens, markers, all that kind of stuff here. But sometimes, you don't want mixtures to  
221 stay a mixture. Right? Today, we're going to be separating them. And sometimes we want to  
222 separate mixtures. Go ahead and tell your partner what it means to separate something?  
223 Ss: *[students all talking at once]*[???]—into parts.  
224 T: And Mildred, how do we say this word in Spanish?  
225 S: Separar  
226 T: Everyone try that, one, two, three  
227 Ss: Separar  
228 [00:15:12]  
229 T: Thank you Mildred for teaching that to us. So, what are some things that you might want to  
230 separate when you think about separating something? Um, Axel?  
231 S: A cookie and mud.  
232 T: Oh, yeah. If I had cookies and some mud on it, I'd want to separate them. I'd try my best to  
233 take the mud off the cookie and divide it into two separate parts. Um, Alexis?

234 S: Milk and ice.

235 T: Okay. Milk and ice and you don't want the ice in there. Now, even though—that's a really

236 cool. Because part of me would think, well ice and water, they're made of the same stuff, but

237 what's different—what's a different property of ice and water that makes it into a mixture even

238 though this couldn't be a mixture? Um, Antennal?

239 S: It's frozen.

240 T: Yeah, the frozen. The hardness is a property of it that makes it into a mixture.

241 [00:16:05]

242 T: So today, um, we're going to be separating some mixtures. Thumbs up if you're ready to start

243 separating mixtures? Okay. So we are about to get started. Before we get started, what do we

244 always need to go over?

245 Ss: Lab rules

246 T: We go over these every time. I trust you guys as a group to read each rule as a group. Nod

247 your heads if I can trust you. Okay, I'm going to give you two minutes with learning bodies to

248 tell me when you're ready to start the lab.

249 Ss: *[listing rules]* Listen first. Wait for instructions before touching anything. Learning bodies

250 need empty hands. Remember labs are for focused learning, not for playing around. Respect the

251 materials, procedure and space. Clean up quickly and quietly at the end of labs.

252 [00:17:08] Okay, so I think we know how to do all those things so I noticed when we read it,

253 some of us got tripped up with the word "procedure". So I want you to read after me, "pro"

254 Ss: Pro!

255 T: "ce"

256 Ss: ce!

257 T: "dure"

258 Ss: dure.

259 T: Procedure.

260 Ss: Procedure!

261 T: And remember, that's the process. That's when we read the step...

262 Ss: Do the step!

263 T: Exactly. So! When you get your trays, which will happen in just a few moments, you'll be

264 sending one person to get a tray from the back, and we're not deciding right now or I will decide

265 for you. Okay, you're going to get your materials, which you're not going to touch and you're

266 also going to get a packet. There should be two packets on each tray so that you can share with

267 your partner or if there's a group of three, then the person by themselves can have their own

268 packet to look at. So, when I say go, you're going to send one person to the back, show me with

269 your fingers, how many people you will send. Okay. And then go ahead and read that middle one

270 out loud to your table.

271 Ss: Place your tray at the middle of the table, do not touch any of the materials.

272 [00:18:11]

273 T: The only thing that I'm allowing you to touch are packets on the top. You may pass those out,  
274 but you are not to touch the cups. You are not to touch anything else. And one thing I'm going to  
275 warn you about—[??]—follow your eyes, on me, to the back to see your trays. Now on your  
276 trays, you're going to find these. You're also going to find cups and they have post-its that are  
277 stuck on, but they're coming off, just a little bit. So you want to be careful if you're carrying it,  
278 that those post-it's don't fall. If they fall, you do have permission to pick it up and put it back on  
279 that cup, okay? And raise your hand if it fell and you're not sure which cup it belongs on, okay?  
280 Okay, you may go ahead and go.

281 Ss: *[students moving about to pick up materials]*

282 T: Now you may listen to those groups who are really doing a nice, focused job of grabbing their  
283 trays. And while you're waiting, let's see who's making a good choice right now. I can  
284 see...[student name] working on her science vocabulary workbook. Smart decision she's making  
285 right now. Okay. So I see we're passing out the instructions.

286 [00:19:19]

287 T: We did it quietly and...I think we're ready. So we are ready to get started. So before we get  
288 started with the actual lab, we want to learn a little bit about the three materials we'll be using—  
289 three different types of matter. So, the first type, and at this point you are allowed—one person—  
290 someone who did not carry the tray, could pick up the cup that has these little pieces and it says  
291 G on the outside. So one person pick that up. And we're going to say the name of this mystery  
292 substance by looking up here and saying it on three. One, two, three.

293 Ss: Gravel!

294 [00:20:05]

295 T: Go ahead and pass the cup around. Take a moment to look at it and then raise your hand if  
296 you've ever seen this kind of stuff before. So pass it around.

297 Ss: *[students talking among themselves]*

298 T: And when you're done, you can put it back on that tray.

299 Ss: *[students talking among themselves]*

300 T: Okay, raise your hands if you've ever seen this stuff before.

301 Ss: *[students talking among themselves]*

302 T: Raise your hand...most of you have. Has anyone else seen this before? Seen this stuff? Go  
303 ahead and share with your table where you've seen this before.

304 Ss: *[students talking among themselves]*

305 T: Okay, I'll just have a couple of share-outs. I saw most hands up so I'm just going to call by  
306 sticks. Adhalia, where have you seen this gravel before?

307 S: I've seen gravel at the beach.

308 T: Raise your hand if you've also seen gravel at the beach. Okay. Alexis, have you seen this  
309 before?

310 S: I've seen it in the park.

311 T: Can you use the word *gravel* in your answer?

312 [00:21:09]

313 S: Um, I saw gravel at a park.  
314 T: Raise your hand if you've also seen gravel at a park. Okay, is there anywhere else you've seen  
315 it? Uh...Karina—oh shoot. Sevan [*name unclear???*]?  
316 S: Uh, I've seen gravel in a backyard.  
317 T: Raise your hand if you've see gravel in your backyard before. Or in someone else's backyard.  
318 So gravel is a pretty common material—pretty common substance. And it's one of the materials  
319 we'll be using. So as we look at our other two materials, I want you to think and start comparing  
320 how they're the same and how they're different. Okay, in the next cup, someone different pick it  
321 up. It's going to be the cup with the S on the outside. Go ahead and have someone pick up the  
322 cup with the S. Pass it around and see if you can figure it out—this is something you've used  
323 before without—don't touch it—share with your table what you think this might be.  
324 Ss: I think it's salt. [*students talking among themselves*]  
325 T: No tasting, no touching. Pass it around.  
326 Ss: I think it's sugar!  
327 T: What do you guys think it is?  
328 [00:22:01]  
329 Ss: [*students talking among themselves*]  
330 T: How do you know?  
331 Ss: [*students talking among themselves*]  
332 T: Okay. Mata Loma  
333 Ss: Leopard leaders  
334 T: Let's say it one more time. Mata Loma  
335 Ss: Leopard leaders!  
336 T: Okay, wonderful. So I saw some different ideas. I heard some salt. I heard some sugar. This  
337 is...salt.  
338 Ss: [*some Ss cheer*]  
339 T: But! We're not going to use the name salt today. Because this is not—salt is actually lots of  
340 different kinds of salt, which is something I didn't really think about. I thought, you just put your  
341 salt on your food, but there's different kinds. This is a specific kind. And it is called, sodium  
342 chloride. Let's say that on three. One, two, three.  
343 Ss: Sodium chloride.  
344 [00:23:03]  
345 T: So today, when we're saying sodium chloride, we just mean the kind of salt that we put on  
346 your food. We call it table salt. Or another name for it is pincher salt. Raise your hand if you like  
347 to put salt on your food—on some of it. Okay, so what is the food you like to put sodium  
348 chloride on? Which is salt? Who wants to share? What's a food that you like to have lots of  
349 sodium chloride? Laura, what's something that you like with sodium chloride?  
350 S: French fries.  
351 T: So "I like French fries..."  
352 S: I like french fries...

353 T: “with”  
354 S: ...with sodium chloride.  
355 T: Excellent. So it doesn’t sound good, but it’s just with lots of salt. I like French fries. Raise  
356 your hands if you like French fries with sodium chloride. I do too. Let’s take one more.  
357 Um...Antonio. What kind of food do you like have a lot of sodium chloride on?  
358 S: Um..I like sodium chloride on...curly fries.  
359 T: On curly fries. Fries are popular. Excellent. Anything that’s not a fry that you like sodium  
360 chloride on? Uh...Jonathan.  
361 [00:24:07]  
362 S: Taco!  
363 T: Raise—use that in a complete sentence for me.  
364 S: How do I say it?  
365 T: So “I like...”  
366 S: I like sodium...uh...chloride...  
367 T: Good  
368 S: ...on tacos!  
369 T: Beautiful. Go ahead and share with your tables what you like sodium chloride on.  
370 Ss: [*students talking among themselves*]  
371 T: OK. Mata Loma  
372 Ss: Leopard leaders  
373 T: Excellent. So those two you’re pretty familiar with. This next thing really was sort of a  
374 mystery substance to me. Because I’ve never heard of it before I started planning this lab. And  
375 some of you might have, but you might not have. It is called *Diatomaceous Earth*.  
376 Ss: What?  
377 T: That’s what I said. Raise your hand if you’ve heard of *Diatomaceous Earth* before.  
378 S: I have.  
379 T: You have? Where have you heard about it, Jonathan? Do you know?  
380 S: I don’t remember.  
381 T: But you feel like the word’s familiar to you? So a word like this, when I look at it, it’s almost  
382 even hard to say especially figuring out the meaning.  
383 [00:25:13]  
384 T: Repeat after me: *dia*  
385 Ss: Dia  
386 T: *Toma*  
387 Ss: Toma  
388 T: *ceaous*  
389 Ss: ceaous  
390 T: *earth*  
391 Ss: earth  
392 T: The *earth* part is pretty easy, right? Repeat after me: *Diatom*

393 Ss: Diatom  
394 T: *aceaous*  
395 Ss: *aceaous*  
396 T: Repeat after me: *Diatomaceaous*.  
397 Ss: *diatomaceaous*  
398 T: Say it five times fast, go!  
399 Ss: [*students repeating diatomaceaous*]  
400 T: So if I'm looking at it, whenever I get a word I don't know, like *diatomaceaous earth*, I was  
401 like "I have no idea. What is *diatomaceaous earth*?" But! I do know the word *earth* and I know it  
402 means the globe. Does anyone know what else it can mean besides the globe? What can *earth*—  
403 talking about *earth*? Yeah?  
404 S: It can also mean the ground that we stand on.  
405 T: Yeah the ground! Or I think of sort of like...like the dirt. So I know that this has something to  
406 do with something that's sort of like dirt. And that sort of fits. Go ahead and pick up the cup that  
407 has the D on it and pass it around. Just take a look.  
408 [00:26:15]  
409 Ss: [*students talking among themselves*]  
410 T: Good. Good sharing! I like how that group is making sure everyone gets a—just take a  
411 moment, what are some properties you're noticing of the *diatomaceaous earth*?  
412 S: Well...it's like a flower.  
413 T: Make sure we don't—we're not putting our papers in. We're not touching it. We're just  
414 looking right now. You have about five more seconds. Four...three..two... Make sure everyone  
415 passes real quick. You're going to get lots more time to observe it. Right now, just a taste... one.  
416 And taste it in a figurative kind of a way where it gives you an idea, but not a real in-your-mouth  
417 kind of taste. So how about I break down this big part?  
418 [00:27:01]  
419 T: *Diatomaceaous*. So...  
420 Ss: *Diatomaceaous*...  
421 T: ...if I were to say that...but I noticed this part, *diatom*, sort of seems like a group. So what I  
422 did is I looked up *diatom* and what I found out is that *diatom*, it's a single cell organism. Okay.  
423 Everyone point to the *diatom* on—in your notes. Find where it says *diatomaceaous earth* in your  
424 science notebooks, where all those definitions are in your science notebooks. And point to that  
425 *diatom*. Did you all find the *diatom*? Where it says *diatomaceaous earth*? It's on the second page  
426 at the top. I want you to point at the thing that's actually the single-celled organism. It looks like  
427 this slide right here. So...*diatomace*—*diatom* is a single-celled organism like yeast, remember  
428 we studied yeast, and that was a single-celled organism. So that's what a *diatom* is.  
429 T: And then I have this part, —*aceaous*, and that sort of seems to me like a suffix I might have  
430 seen in other words. So, "*aceaous*", believe it means, *like* or *similar to* or *full of*.  
431 [00:28:11]  
432 T: So, *diatomaceaous*, just means *full of diatoms*. Tell your partner what *diatomaceaous* means.

433 Ss: *[talking with their partners]*  
434 T: So once I break it down like this, I like to check. So I did find the real definition. And what I  
435 got was it's a very fine powder made from the fossils, or those leftover pieces after the diatoms  
436 all die and got just the fossil parts, the fossils of diatoms which are a hard shelled single-celled  
437 organism. So it really is a powder that's made of the fossils of the little tiny single-celled  
438 organisms called diatoms. So even though this looks sort of like dirt, it's made of the remains of  
439 a living creature.  
440 S: ohh...  
441 T: Yeah it sounds a little gross, but it's pretty darn cool.  
442 [00:29:00]  
443 T: So, go ahead and tell your partner what *diatomaceous earth* actually is?  
444 S: *[talking with their partners]*  
445 T: Okay. Uh, did you want to share out, Victor?  
446 S: Well, I have a—  
447 T: Uh huh?  
448 S: Do you know how small a diatom really is?  
449 T: It's very, very small. So this picture, right, this picture is under a microscope. Remember  
450 single-celled so it's very, very, very tiny. Like when we went on the field trip, remember we  
451 used the microscopes to look at plant cells—how tiny those cells are? So it's actually very, very  
452 tiny. Ah, yes, Victor?  
453 S: Also, how did you get it?  
454 T: Um, you can buy it. We got it from the kit, but you can buy it. They actually use it in things  
455 like wool. It's pretty cool. I got surprisingly enough. So, we've been good chemists like good  
456 chemists, we did our research. So we can now get started.  
457 [00:30:07]