

Intermediate Science Micro  
Main

Teacher: Textbook person needs to do their job, notebook, please enter silently, you have 3 new entries on your table of contents. Come on in. Silent threshold. Good morning, hi, hi, good morning, goodbye.

Students: Look at my Jordan's.

Teacher: That's why you're tardy to class? Because you were taping Jordan's on? Okay, try to find a better reason to be tardy to my class next time. Okay, textbook people and notebook. If you are waiting for your notebook, please cool down, drink water, stay silent, once you get your notebook you have three new entries. Okay, tables, I need 2 people to go get notebooks, perfect. I need 2 people to go get textbooks. You guys are doing the same thing today. There's a table of contents on the about page, there's a do later on Google classroom, there's your checklist on Google classroom. Sound good?

Teacher 2, you have everything you need? Okay. Student, I think they got them, their notebooks. Okay, thank you for getting started. Student's outside if you can take it to him.

Students: Teacher, what if our textbook person is outside?

Teacher: [00:02:00] Can you grab for your table then? Thank you. Okay, you don't need your textbooks right away, that's for when the activity is today, you can put it to the side if you need more space. Thank you for getting started on your table of contents, I know I said there would be no more entries but these are for real the last three, I promise. Like, for real for real this time. So I'll give you a few minutes, if you're on the back table, only the back table has permission to open their Chromebook and go to the about page to look at this table of contents if you can't see it.

Students: What if you're facing away?

Teacher: If your back is towards the screen, you may open your Chromebook if you only stay on the about page and go to the table of contents. That is the expectation. If you get finished early, go ahead and turn to those pages, make sure you have a title. Thank you Student. No rush, you have plenty of time.

Students: So, I want to talk to you about the state of the [inaudible 00:03:15] project. Can I talk to you later?

Teacher: Yes, I'll be making some announcements about your human body project, if you have questions on that. Do you want another seat? I am going to take attendance. Is anybody at your table absent? Can somebody tell me?

Students: Student.

[00:04:00]

Teacher: Student.

Students: [inaudible 00:04:01]

Teacher: Who? He's here

Students: Oh, Student. [inaudible 00:04:07]

Teacher: Who? Student, is Student here?

Students: Student's outside.

Teacher: Student Moore?

Students: No, [Student 00:04:14] is outside.

Teacher: [Student 00:05:09], okay. Okay make sure you drink water and cool down if you finish early. I'll give you about two more minutes. If you are finished and would like to move on, you do have a do later today. So if you look at our agenda, do now is do table of contents, we're going to do a short do later. I promise to keep it short. I know you have a work day today. Just reviewing what we already talked about ... about microbes so if you are ready, you may open your Chromebook. Please stay on our Google classroom. Excellent, thank you.

You're answering these questions on what page? Anybody.

Students: 65

Teacher: 65, yeah, you guys all got it. Your do later for today, please answer, you don't have to write the question, if you go to Google classroom, I'm going to put it up here in just a second, you're going to see the 12.8 Do later. Go ahead and open up that slide. I'm going to recommend that you go to present mode because you have to look at some pictures. If you do need more time on the table of contents, can you show me how many more minutes you need? Nobody's still doing table of contents. One more minute.

[00:06:00] I don't think I have a pencil, yeah. Okay, I'm going to move us on. So what I'm going to do is I'm going to explain the do later real quick and then I'll let you get to work. We'll have a short discussion about it, and then we'll get started on our work day. Okay, can I get a volunteer to read this first paragraph since we're all on the first slide? If you went ahead, let's go back to the first slide to make sure that the instructions are clear. Student, nice and loud please.

Students: Before we begin our work day, let's take a moment to review what we know about prokaryotic and and Eukaryotic cells.

Teacher: Excellent. [Student 00:07:15], second paragraph.

Students: Please answer the next few slides on page 65 in your notebook. When you are done, raise your hand for a stamp, mark the assignment as done on Google classroom, and get started on your checklist.

Teacher: Okay, excellent. So three things, answer these on page 65, raise your hand and get a stamp, mark as done in Google classroom. Okay? IF we have a little time to discuss, I would love to hear your thoughts on this. Or maybe you can discuss as a table, compare answers. But basically what you're doing ... let me walk you through these slides. These should look familiar and if they don't look familiar then you haven't done the microscope activity with me yet. But these ... Anybody done activity 43 yet? [Asun 00:08:00] do these look familiar?

Students: Yeah.

Teacher: Can you name some of these?

Students: No.

Teacher: No? Okay good. Can you give me a category for what I am looking at here?

Students: There's animal cells?

Teacher: There is animal cells. What else? [Student 00:08:32]

Students: [inaudible 00:08:26]

Teacher: [Student 00:08:29]

Students: [inaudible 00:08:29]

Teacher: So what category would that be? Protist, good. And then finally, there's one other category. I have animal cells, protist and ...

Students: Bacteria.

Teacher: Bacteria, good. So basically, you're just guessing, I want to see what you know, of these pictures, which one would be prokaryotic, why? Second one, which ones are eukaryotic, why? The next one you're just trying to categorize them based off what you're observing. Remember, do nows ... or do later, are low stakes so don't worry about getting it wrong, just make your best guess. We'll talk about it together as a class.

And then finally, this is the big one that I want you to get, so it starts easy and gets a little harder. The big one, we haven't really talked about as a class yet, so we've been studying microbes and cellular biology right, so I want to know ... How do you think the

work connects to our bigger essential question. You remember that guy? We haven't talked about that guy in a while and that's my bad that's my [cooliana 00:09:36]. Okay? But our essential question, I put it up there for you, how do we know what we know about the natural world around us. So how has what we've been doing in class help us answer that question.

[00:10:00]

I would like to move on in 8 minutes, so see how much you can get done. You can work as a table, you can work individually ... When you're done, raise your hand to get a stamp and we'll move on.

Okay, prokaryotic. What did prokaryotic mean? Go back to your notes. You guys may have to go back to your notes. Can you push in your chair? Thank you. So you may have to go back to your notes, you may have to go back to an earlier do now, nice, [Student 00:10:52]. Some of you are getting this right away, that makes the teacher happy. So I think we wrote it right here. So this isn't necessarily true. Actually, this is true. But these guys, sometimes they have a nucleus.

Yes.

Students: What's a prokaryote

Teacher: Protist? Protozoa. What did protozoa mean?

Students: Little ... Something

Teacher: Little something. Little animal, yeah. If you haven't done the microscope activity, it's really cool because you are looking at these guys up here. So actually, this is going to help you answer those analysis questions if you haven't done them yet and if you have, you can go back and check to see what you wrote after our discussion.

[00:12:00]

This is the fun part, I tried to trick you.

Student: [inaudible 00:12:49]

Teacher: Okay, bring them back as soon as you can. [crosstalk 00:13:08] They can. This is my group. Is there anybody else in there that needs microscopes?

Teacher 2: I think there's still ... I think this was [inaudible 00:13:22]

Teacher: Okay ... So they didn't ... [crosstalk 00:13:26]

Teacher 2: You guys started but need to finish right? You started, you started, you started ....

Teacher: Oh that's good. Okay. Oh you're done, okay. So do you think I should do them ... Go first? Or? Let me start first with them there and then once I get the first group through then we'll ...

Teacher 2: Just trying to see who needs what as far as handouts [inaudible 00:13:48] I can make just one run.

Teacher: Okay, cool, thank you.

[00:14:00] Okay, if you get stuck feel free to have a conversation at your table. You can work together on this, we have about 5 more minutes until I would like to move on. Actually, I'm going to recommend you work together on the classify slide. This one's pretty tough and it's tough because Teacher tries to trick but you guys are used to that.

Students: You mean like that?

Teacher: They may not necessarily belong in a category. There may not be a bacteria. There may not be a virus ... I see some people using their book, some people using their notes ... What are we thinking? None of them are bacteria?

Students: None of them are virus cells.

Teacher: Why?

Students: Because, in a virus[crosstalk 00:15:29]

Teacher: And I probably wouldn't want to be looking at a virus on a microscope with you guys, yeah. So good, there are no viruses.

Students: These three might be bacteria

Teacher: Why?

Students: Because they [crosstalk 00:15:48] and this cell does not have a nucleus and [inaudible 00:15:54]

Teacher: Okay good. Excellent. Where's your notebook?

[00:16:00]

Students: Couldn't find it.[inaudible 00:16:01]

Teacher: You couldn't find it? Yeah let me talk to him. Hey we got a lot of work to do today. Are you ready to get going? Are we done with that? Okay, come on in. So we're going to start to discuss the do later, you can just write down what the answers are.

I hear really great discussion happening on table 4, I don't know if that's happening anywhere else. Use your peers' brains, reason it ... Talk it out. Interesting.

Students: [inaudible 00:17:25] The virus then. This one would be the virus. I think this would be

the virus.

Teacher: Or is there a virus?

Students: I think for [inaudible 00:17:41]

Teacher: [00:18:00] Look at Student's heart. I'm going to show it as something. Okay, how many more minutes would you like? Remember this is just to discuss. I'll give you 4 ... I see a mix ... 4 more minutes and then let's talk about it. If you didn't answer something we'll write it down but then we got to move on because I have some announcements and I want to get you some work time.

Teacher 2: [inaudible 00:18:15] I think the cards, put them in front as a ...

Teacher: Yeah, that's a great idea. And I have a ...

Sorry, I missed your teeth. Thanks.

Student. Okay, so this is going to go on page ... Oh good, yeah, you're there. You guys can talk about it too if you want.

Remember when you're done raise your hand for a stamp, mark it as done in Google classroom.

Students: Viruses look a bit like this ... [inaudible 00:18:58] I don't think ...

Teacher: Good, there are none.

Good, Student.

[00:20:00] Oh, hello. Did you check behind the bookshelf? You did ... No? Can you check one more time for me? Not the white one ... IF it's not on the white one you can check the other ... Did you take it home? Here, do me a favor and check this pile ... No those are old.

Students: [inaudible 00:20:10]

Teacher: Okay. Okay, we're wrapping this up in two more minutes. If you don't get your stamp I can give you your stamp after class so try to finish your thoughts. Rico, I'll look for it after class. It's gotta be here somewhere then. All right ... Yes ...

Students: [inaudible 00:21:27]

Teacher: Human cells and protozoa have a nucleus.

Students: Oh, all right, cool.

Teacher: Yes.

Students: [inaudible 00:21:37]

Teacher: For our, eukaryotic ... bacteria is prokaryotic ... protozoa have a nucleus too that's the Student part.

Students: They're both eukaryotic.

[00:22:00]

Teacher: Yes, which is tStudent because microbes are ... Most microbes are prokaryotic except for protozoa. Okay, go ahead and finish your thoughts and then we'll talk about it. And if you didn't finish, you can jot down some ideas you hear. Yes ... Oh done? Sorry.

Students: I didn't finish.

Teacher: If you are done ... If you didn't finish, no worries. Afterwards, just fill in as we discuss. I can stamp you after our notebook check. The second notebook check isn't until next week, Thursday. Oh man I've got a lot of announcements for you but we'll be quick. Okay?

So let's go ahead and talk about this and I'm going to move quickly. So I'm going to ask you to ... Let's just do ... Give me Student but Student with his mouth open. So wait for 100% of computers and eyes ... So not a all the way closed Student just a mouth agape Student, there we go.

Okay, so I'm going to kind of skip pretty quickly through this one. Can someone refresh our memory of what the differences between prokaryotic and eukaryotic cells ... [Student 00:23:19]

Students: Eukaryotic have nucleus and prokaryotic do not.

Teacher: Good, and what do we have?

Students: We have eukaryotic.

Teacher: So You have a [crosstalk 00:23:34] Good, you have a nucleus you are eukaryotic.

I'm going to skip through that one, you guys aced your quiz, I think you get it. Here's the hard part. [Student 00:23:41] go ahead either take a stab at it or pass it on to somebody else as far as which ones do you think are bacteria and why?

Students: So ... Mine is ... My ... [inaudible 00:23:53] that A and D are bacterium.

Teacher: A and D?

[00:24:00]

Students: A and D because they do not have nucleus

Teacher: Not one that we can see, okay.

Students: Not one that we can see.

Teacher: Well I didn't observe it, okay. And what else? That's all you need?

Students: [inaudible 00:24:22]

Teacher: Okay, pass it to somebody else if you want to add ... Somebody else wants to add to that. Do you agree or disagree with Student?

Students: Well, another reason [inaudible 00:24:34]

Teacher: Is that?

Students: A and the ... We thought A and D were bacteria is that when you look at [inaudible 00:24:45] I kind of discovered that bacteria is more like, dots and [inaudible 00:24:50] it's not exactly blobs it's more [crosstalk 00:24:51]

Teacher: Very scientific terms but you're actually correct. You're saying dots versus blobs. Can somebody help him be a little bit more ...

Students: Scientific?

Teacher: Well, let's get more specific between dots and blobs. Anybody has their hand up, you can invite. What is Student trying to get at? He basically has it. Quickly Student.

Students: Well for C, if you look close there's like a darker smaller blob in the middle.

Teacher: What could that be? So would bacteria have a nucleus? So would this be bacteria? Okay, so we can get rid of this one. Anybody want to else? I'm looking for bacteria.

Students: I think Student is trying to say is that A has more a consistent pattern and D sort of just is a little bit more random.

Teacher: Okay, yeah, I'll help you out with the wording because it's important to know these are all at the same magnification. Maybe that'll help you out. These are all at 40 times the magnification. So I'm looking at the same magnifying power between these two. Just, any other descriptive words?

Students: That one, it clusters together and there [inaudible 00:26:26]

Teacher: Yeah, there's a lot more of them and they're smaller. That's one thing we can observe



versus this guy, the blob, this is one what?

Students: One cell.

Teacher: One cell, thank you. Okay, go ahead Student. Sorry I'm going to invite Student. Do you want to move on to the next one?

Students: No.

Teacher: Okay let's keep talking.

Students: So we think the ... Bacteria is D because the image that we looked within the book ... But D has like more connected [inaudible 00:27:14] and A has one very long [inaudible 00:27:16] separated by [inaudible 00:27:17]

Teacher: Good, very good. If you didn't write it down, they are correct. A and D are your bacteria. This was Bacillus, you're going to look at that in the microscopes, don't worry about naming it. This was the trypanosoma. This causes sleeping sickness, don't worry about naming it. Okay, so let's move on quickly. Were there any viruses?

Students: No

Teacher: No, okay good. No viruses ...

Students: You told us.

Teacher: I kinda helped you out. Number 5, which one are protists, protozoa? And I had a good discussion with one group about what protozoa meant, Student you can invite. [crosstalk 00:27:55]

[00:28:00]

Students: I think B is a protist or a ....

Teacher: B is a protozoa. What kind? Do you know?

Students: I don't know.

Teacher: Okay, but why?

Students: Because when you're looking in the microscopes, the protozoas were more like, structured looking, and kind of 3D looking, so and the B just looks like it had more ... characteristics to it, so ...

Teacher: Do you remember what protozoa meant? [Student 00:28:39] do you?

Students: No.

Teacher: No? Okay so pay attention to this part. Do you remember what protozoa meant? Anybody?

Students: It's little animal

Teacher: Little animal, very good. So does this look like its own little creature? Maybe, maybe not. But that's how they got the name. This is actually an amoeba. It is a protist. Is there any other? Student is there any other?

Students: E [crosstalk 00:29:05] microscope

Teacher: Good, some of you have done the microscope activity it helps you out. Yes, B and E I'm going to move us for ... [Asum 00:29:12] I'm going to invite, are there any that are animal cells and why?

Students: C

Teacher: C, why?

Students: It has a nucleus.

Teacher: Good guess, yes. C is what? Anybody done the microscopes and can share what's C?

Students: Human cheek.

Teacher: Cheek cell, very good. Moving on. All right, this is taking a little bit more time so I'm just going to move us on. This is actually a question in your analysis questions so ... I'm going to skip this for now, we'll come back to it but just be noticing ... The purpose of your microscope activity is to start to tell the difference between bacteria, protozoa, and human cells. And then in the next one you learn more about viruses okay.

[00:30:00] Finally, let's wrap it up with a few sharers, maybe if you haven't shared yet and you want to, how has what we've been doing, think all the way back quarter 1, no where are we ... Quarter 2. With your research outside of class, [Student 00:30:08]. With your work in class on microbes ... How has what we've been doing helping answering our bigger essential question? And we can kind of just discuss this, I'm going to do 2 more minutes before we move on. Student.

Students: I think it connects because in the natural world around us there's two types of things. There's living things and there's not living things and all living things are made up of cells so if we understand cells then it means that we understand every living ... That we understand living things which is part of the natural world around us.

Teacher: Seems simple enough. Mind blown. Thank you Student. Anybody want to add to that or disagree with that. Student you're just attracting the community ball.

Students: Obviously, so I think that kind of Student said, if we know more I think one way that we can know more about the natural around us is to know more about what's living, what isn't. So the cells are a way that we know ... That we can as morally say, what is living what isn't without saying, that's breathing so it's living. So, with the cells we can analyze more of what exactly makes us living and the natural things about it.

I think it connects because, we never knew about the microbes and all microbes there are, we would never know if there's good kind, there's bad kind, because then we'll always be getting sick and we won't know why we're getting sick.

Teacher: Awesome, Student, thank you. That was one point that I had. Do we think about microbes often? Student? Do you think about microbes often?

Students: No. Not ...

Teacher: Why? Why don't we think about these things?

[00:32:00]

Students: They're not far from our life.

Teacher: They're not [crosstalk 00:32:03] They're all over you right now actually, but, right, we don't think about them because why Student?

Students: Because they're microscopically small.

Teacher: Yeah, microscopic. Out of sight, out of mind right? So, it's like a whole invisible world going on that we don't even know about but it's good to understand. Student is my last one. I feel like we're not paying attention to the speaker so that must mean you're not interested in having this conversation and not everybody is feeling intellectually safe so I'm going to have Student be our last one. Please try to give Student your energy. Remember the magnets in your shoulder that are supposed to be following the community ball? They're going to be ... Thank you Student ... They're at Student right now.

Students: I feel like this answers our essential question because if we didn't know about, like [Student 00:32:56] said, what's in things around us, we wouldn't really, I guess, be here. Like, We would be here but if we didn't know we would kind of wonder like, what we're made of and then yeah.

This also like, things have come a long way and many people have invented things and they created this chain and inspiration for scientists so, it answers how do we know about the world around us because we know about these tiny little things that we can't see with our own human eye and it's ...

Teacher: And do they affect us?

Students: Yes

Teacher: Yeah. So let me just end with that. Guys remember we learned about the guys who had to invent the idea or announce the idea that you need to wash your hands? That wasn't common knowledge before, okay? But doctors needed to wash their hand and use sterile equipment before surgeries with multiple people? That wasn't a thing. People had to be taught that, right? So just keep in mind that we're moving forward but we gotta recognize the reason behind these things.

[00:34:00]

Okay, I feel like I've lost some of you so I'm going to ask you to redirect, I'm almost done talking and you'll have a full 30 minutes of work time. So thank you for your attention so far. I'm expecting everybody, Student and [Student 00:34:25] included, this is the third time. If I have to ask you again, you will leave and work independently on these activities. So, I lost my train of thought.

Announcements real quick, some important announcements for you guys. Can I show you an example some models that are being brought in? How cool is this? I'll hold it like this, don't tell them I did that. This is Student's. Student did a model of the heart, so remember the rubric you're being graded on is craftsmanship. Would you say this has craftsmanship?

Students: Yes

Teacher: What would you give this in craftsmanship, according to the rubric? Attention to detail, quality ... Would you say he's succeeding.

Students: Yes

Teacher: I would too. I also want to show some of your classmates that have brought in their models. So I'm going to be careful with these, like I almost broke Student's.

Students: Was that clay?

Teacher: Yeah so these are some models that are starting to come in. Remember, this is one form of model, you can be creative as you want, I didn't really give you many parameters on this. These are due when?

Students: Tomorrow.

Teacher: Tomorrow, okay? So reminder, we'll talk about it at the end of class. These are due tomorrow. Tomorrow is your final work day. No do now, no table of contents, you're going to come in, you can work on human body project presentation, you can work on your paper, you can work on the checklist, anything you want to. You have the full time for a work day. Presentations start Friday.

[00:36:00]

Students: What happens when you ... Next week Wednesday.

Teacher: Next week Wednesday is a weird Wednesday.

Students: Oh, we don't have school on Friday.

Teacher: You don't have school on Friday, so just putting that out there. Other announcements will be, when you get started on your work day today, make sure 43, microscopes, and 44 are done first guys. You need the microscopes which you can't take home and you need the classification cards which you can't take home. Everything else is posted on Google classroom you can do it at home. Okay? All right I am officially done talking, I am going to start your work day. Can I really quick ... Has anybody not gone to the microscopes in here? Those with your hands up, do you have this? Keep your hand up if you have this. Okay, so I might need more copies.

So I'm going to ask, if you have this and you just didn't finish, five of you take a seat in the microscopes in the back. If you need the classification cards, come see me in the back, if not, you're working independently. I'm fine if you listen to music if you have your own headphones.

Students: [inaudible 00:37:21]

Teacher: I'm going to put your checklist up here. What do you need?

Students: [inaudible 00:37:26]

Teacher: Good, read the procedures first, I'll be right back there. All right, we have 30 minutes until clean up. Make the most of your time. Your checklist is on the board if you need it ...

Students: Can I get the identification cards?

[00:38:00]

Teacher: So the five seats are for the people who started but didn't finish. My bad, started and didn't finish. I will call you back, Student, Student, and Aiden.

Students: Can I get ...

Teacher: Excuse me?

Students: Can I get an ident-

Teacher: ID cards, wait just a second

Students: Oh, ID cards

Teacher: Are you guys all ID cards? Oh that's fine.

Who's microscope? Have a seat at the microscope. There you go. Actually, Student, Student, we did have room these guys were waiting on cards. Okay. You guys started this?

Students: Yeah we started.

Teacher: Did you need the orange classification cards?

Students: Yes

Teacher: Okay, get to work. You started this?

Students: Yeah.

Teacher: Do you need the orange classification cards?

Students: Yeah

Teacher: Did you get that far?

Did you start this?

Students: Yeah.

Teacher: Here you go, you'll need them. You started this?

Students: Yep.

Thank you Teacher

Teacher: Yep. Do you need the classification cards?

You guys can start to turn on your microscopes. How do I do that? Okay.

You need these too? Are you guys working together? Okay.

All right.

Students: I'm here to get cards.

Teacher: Yes, classification cards. You started this?

Students: We didn't start it but [Student 00:39:43]'s reading it right now and we're going to do it.

Teacher: [00:40:00] All right, only Student has started so we're looking at 5 things today. I've shortened it down from 7 so make sure you have your titles. We're looking at 2 protozoa which are amoeba, so this actually should have been done before you came back. But that's okay. Amoeba. Is [Student 00:40:12] needing some guidance?

Students: Could I get the ID cards?

Teacher: Hold on one second

Student: [inaudible 00:40:18]

Teacher: Okay, let me get them set up and then I'll talk with them.

Student: [inaudible 00:40:26]

Teacher: Okay, thank you. All right, [Student 00:40:27] what do you need?

Students: I need ID cards.

Teacher: ID. You know what to do? Did you read the procedures? Why don't you go read the procedures then come back and tell me what you're going to do. Okay, Amoeba, Paramecium, Trypanosoma bacteria, Bacillus bacteria, and then we're just going to look at the human cheek.

Students: Wait, we're just doing 5 though right?

Teacher: We're just doing 5 so I'm going to cancel blood, and I'm going to cancel [Cacus 00:41:04] If that's okay. The reason why-

Students: Wait what are the other ones on?

Teacher: Here, I'm going to give you a slide and it will have the spelling on them. So when you get there you can look how to spell it. Yes?

Students: Sorry to bother you again but [crosstalk 00:41:17]

Teacher: Which ones? Can you see if they're on here? And if they are we'll just trade them out. Or actually, you can just take 6 from there.

Students: Thank you.

Teacher: Is that the only one? They go all the way through 9. Okay. All right, who would like ... What do you need? One second. What is that? So we're not doing this one. Can you change this to Trypanosoma? I'm going to give that to you first. Here you go. Yes, sir. Yep.

What would you like to start with?

[00:42:00]

Students: Amoeba

Teacher: Amoeba? Amoeba's hard to get into focus but don't give up. Did you guys read the procedures?

Students: Yes.

Teacher: What do you start with?

Students: You get the thing and then you get [crosstalk 00:42:11]

Teacher: I get the thing ...

Students: Get the microscope and then you go on the lowest ...

Teacher: Yes, thank you. What's your lowest?

Students: 10

Teacher: No, try again

Students: 4

Teacher: 4, good the red. So get them in focus at the 4 and if you get them in focus at the 4, and I'm going to tell you Amoeba's hard, Amoeba and paramecium, I'm going to give you that one, one second, if you get it in focus at the 4, then go to the 10 and get it focused at the 10.

Students: Do we, so we have this like fungi[crosstalk 00:42:43] do we use those too or?

Teacher: Okay, hold on to your thought, Student.

Students: Yeah?

Teacher: It's stuck on the metal clip. There you go.

Students: So we have, from the orange cards you give us, we have a fungi card ...

Teacher: So you're trying to ... So the categories you made-

Students: Oh so we keep those?

Teacher: Yeah, so the categories you're made you're trying to classify into one of those.



Students: Okay, and when you ...

Teacher: Hey, you, stay.

Students: When you said you could listen to music, does that go for everyone or just people that ...

Teacher: That goes for everyone today. Here you go Student. You two stay, I need to talk to you, let me give ... What do you need?

Students: I need [crosstalk 00:43:25]

Teacher: You have a human cheek.

Students: I have a question, [crosstalk 00:43:28]

Teacher: And then I'm going to give you the bag, [Student 00:43:30] Good question, the procedure said you will sketch it on the highest magnification you can get in focus.

Students: Bacillus?

Teacher: Bacillus. Here's your human cheek, careful how you ... Oh, don't hold it like that, yep. And your Bacillus. If you can't get it in focus, I will help you in one second, try your best, see if you can help each other, Student, I'm going to tell you you're going to want to start at 4 first. You got it? Okay never mind leave it. Let me check.

[00:44:00]

Students: We're confused on what pages it's supposed to be on.

Teacher: Look at your table of contents, look at the checklist. It's there.  
Hey, what are you working on?

Students: [crosstalk 00:44:14]

Teacher: 44. Okay and the classification cards?

Students: Wait what's that sheet that says anticipation ...

Teacher: That's up there that's 45.

Students: Oh yeah.

Teacher: What are you going to work on?

Students: I'm done with the cards.

Teacher: So now you do the analysis questions while it's fresh.

The reason I want to talk to you is that there was a lot of noises coming when I was trying to lead whole group discussion.

Students: It was Student.

Teacher: Okay and I will talk to Student. But does that mean that you need to also get distracted and have me call you out in front of the class?

Students: I wasn't doing anything. I did, like, the least. I did the least.

Teacher: Take ownership for what you did.

Students: I mean, I did do it but-

Teacher: Okay, you were distracted. I would see your face and I got distracted. I forgot what I was going to say because I was watching you make faces.

Please get this done. You've done the microscope activity?

Students: Yeah

Teacher: You've done the cards?

Students: Yeah.

Teacher: Excellent. Yes, you may drink water if you promise to get to work.

Students: [crosstalk 00:45:11]

Teacher: Yes, actually I'm out you're going to have to join a group.

All right, yes. I want to see this one.

Students: There's only white.

Teacher: No way.

Students: There I got it into focus and I [crosstalk 00:45:20]

Teacher: See, you didn't get it.

Students: I didn't?

Teacher: No.

Students: Wait I only see white.

Teacher: That's the trick, you think you ... Let me show you what you're looking for. So you know what he looks like right? You know what the paramecium looks like? I see one.

Students: Oh I see something.

Teacher: But I've been doing this for like, 6 days straight. So it's not easy. Okay, look in there, where the pointer is looking at. That is what you're looking for.

Students: Oh okay.

[00:46:00]

Teacher: Okay? So now, I'm going to go to 10 and I see him again, so you try to get that guy in it at 40.

You're looking at something white? Amoeba's hard.

Can you ... Oh actually I don't need this, this is charged.

So the amoeba's actually in purple. So this is what I've been doing. Ouch, sorry. I've been moving it around until, might have to bring it up a little, are you watching my methods Student? You sure? This is valuable knowledge here. Just kidding.

Students: I'm not going to be here on Friday.

Teacher: But you'll be back? Or is this the last.

Students: I'll be back.

Teacher: Okay good. I found one. You have a lot of water drops on yours. Okay, you have this in ... The pointer's pointing at it. Okay, that's what you're looking for so now you try to get it in at the 10.

Students: I don't know where ... I can't ...

Teacher: You don't know what you're looking for? Okay, are you on 4?

Students: Yeah

Teacher: And what do you have?

Students: I have human cheek.

Teacher: Human cheek? Yours is stained pink. So, you just kinda look in and move it around until you start to see shades of pink. Oh, there they are. This is also dirty too. You may have to clean your ... Your slides may be dirty guys, or dusty.

Students: Teacher, I'm supposed to see like, purple squiggles right?

Teacher: Purple squiggles.

Students: I'm supposed to see that right?

Teacher: Yeah. So did you try to move up in magnification? I'm going to tell you the bacteria you can get all the way at 40.

[00:48:00] Okay that's what you're looking for. It's hard at the 4.

Student: You want them on 40 right?

Teacher: Yeah, can you check in on ...

Students: Wait we can all go to 40?

Teacher: Yeah, perfect. No. I'm going to tell you right now, help you out, save you some stress, bacteria you can get at 40, the other ones you're going to stop at 10. Here's what I'm going to ask you. When you guys get it focused in at 10, leave it, do your sketch, or when you get it focused at 40, and don't take it out of focus. We'll just rotate so we don't have to waste so much time. Okay there it is. Do you see [crosstalk 00:48:46]

Students: Oh it's all those tiny lines

Teacher: Yeah exactly so let me try to get you in at ... Okay, so, you're going to be able, Student, to get this at 40. That's what you're looking for.

You got it at 10? Sorry I'm just nosy. I'm going to move it, I want you to get this big chunk. This one's kind of junk, yeah. Oh there we go. So the idea is that you get the nucleus inside of it. Okay, if you have yours in focus and you have a sketch, you're going to rotate. I'm going to ask, Student, that you're careful over there, it's kind of my booby trap, so maybe if you want to come around this way, you can.

[00:50:00] So guys, as you rotate, I want you to be keeping in mind the point of this is to be noticing the differences between protozoa, Student, differences between these two when you get there, these two, and this one. Because those are your analysis questions. All right, I would rotate. You guys are going to self-rotate through this, please be careful. You're not getting anything in focus again you're just sketching. Student go to amoeba.

Students: Is the analysis in the textbook?

Teacher: Or in Google classroom.

Students: Okay.

Teacher can you check this one?

Teacher: Yes.

Students: I don't see anything in here.

Teacher: What?

Students: I don't see anything.

Teacher: What?

Oh that is perfect. That's a good one.

You don't see anything? Look what the pointer is pointing at. Here train your eye, it's like a ... You guys ever have magic eye posters? Or are you too young?

Students: Yeah.

Teacher: You have? It's like a magic eye. This one's good, okay you guys are good. You guys did the classification?

Students: Yeah

Teacher: So, I would do analysis questions while it's fresh.

Have you done microscope?

Students: No I was going to do it right now.

Teacher: So can you do me a favor and get the ... Oh never mind, yeah.

[00:52:00] I'll take it. Radial symmetry. Lateral symmetry.

Students: For the A keys, will we need the cards because we just finished.

Teacher: No you'll need your notes. Let me go make a copy real quick.

Students: I have one.

Teacher: You have one? Oh okay. Read through activity 43 and label them. In the materials, label

what you're looking at.

Students: So I don't need to do the microscope?

Teacher: You will. I'll call you back as soon as we have one open. Thank you.

Student: Correct me if I'm wrong Teacher because I think I might be [inaudible 00:52:37] But these pages that you have up there, 56 - 62, should be in here right? So there should be AQ's on this page should 58 should have a key and a handout right here right? And then 59, we'll be having the categories. 60 and every page [crosstalk 00:52:50]

Teacher: Yeah, and it even has this right here that I think doesn't even have to look up there for. So, the key would be, you did the microscopes yeah? Good, so what I would do is as I finish one, Student, as I finish one I would do the analysis questions right away. There's only like, three, so while it's fresh in your mind, answer the analysis questions.

Did you do the cards yet? Here, I'll leave them here for you. Same thing, you're going to tape in the key where it says, page 58, you're going to read through the procedures, you're going to do the activity and answer the analysis questions. I would do this one today or you're going to have to come to tutoring to do it because you can't take these cards home and I can't post them online.

Student: A Q's are on?

Teacher: 57. No. A Q's for this one are on 60. Just follow the checklist. So he's going to tape this in 58.

Student: [inaudible 00:53:48]

Teacher: That's the wrong one. See 66. This activity. Hold on, Student. Is it bathroom?

[00:54:00]

Students: Oh no I just wanted to go fill up my water bottle.

Teacher: Yeah that's fine.

Okay you're going to read through the procedures. Okay, after you read through the procedures you're going to start to get these white cards and put them into categories. You don't know what they are, just looking at them, how would you put them into categories. You're going to write those categories down here. When you're done, you're going to say, "If I was going to put a name on them, what name would I give them." Okay, when you're done, you put that on here, answer the analysis questions. Sound good?

Student: AQ's here, [crosstalk 00:54:39]

Teacher: These AQ's are for the microscopes

Student: So you should have these answered right here? Right? Where I did these? Do you remember this?

Teacher: You have a lot to do. If not, then I would just start with 58. Yeah. You know why, Student, we can do these in tutoring together, okay, so I'd rather you move on. Can you tape this in real quick? Can you give me a piece of tape, real quick? Do you need that much tape? This is expensive tape too. I know because I'm a teacher, I buy this, this is expensive. Yeah that's fancy tape. That's the [inaudible 00:55:24] tape in my world. Okay, don't waste it. Okay, here. All taped. Read through the procedures, make categories with these guys. Okay? Write them down I'm going to come check on you.

Students: Teacher, can you help me with the number 1.

Teacher: [00:56:00] So, the protists you compared, what is this for? Is this for 47? The microscope activity? These are the analysis questions for the microscope activity so make sure you're doing the right one. So the cards are 44.

Hey, so I just wondered, during whole group discussion today, why you were being so distracting. Because that's [Hill-lay 00:56:15] and not like you. Was it because you didn't have your notebook?

Students: [crosstalk 00:56:22]

Teacher: So does that mean you take these two guys down with you?

Students: No.

Teacher: Okay. So next time, if you don't have something, please just give me your attention the best you can and I'll find your notebook, but please don't take the other two because they are way further behind than you are. Okay?

Teacher 2 how we doing?

Teacher 2: We're doing great they're on the analysis questions[crosstalk 00:56:47] listed our characterizations of [crosstalk 00:56:49]

Teacher: That came in hStudent, great work. Thank you guys for working so hard.

Do I have a microscope open?

Students: Yeah because Student left.

Teacher: Okay, Student. Student [Maru 00:57:03], Santa. Oh he's got his headphones in. I have one more microscope open. Student, are you finishing 44?

Students: Um yeah.

Teacher: If anybody else needs a microscope come back, you got to get it done today or in tutoring Wednesday. We have about 10 more minutes. Oh actually, Teacher 2 when they're done we have ten minutes I can shoot them on a microscope.

Teacher 2: [inaudible 00:57:37]

Teacher: Yeah I'm out of handouts but they can just draw the circle on that page.

All right, how we doing. You got all five of them?

Students: Yep

Teacher: Okay, analysis questions while it's fresh.

[00:58:00]

Students: Wait, what is that at? Is that at 40 times or ...

Teacher: That one can go to 40. Can you try? Student? Hi.

Students: Hi Teacher, I'm Santa Claus.

Teacher: Hello Santa. Are you ready to look at some microbes that they don't have in the North Pole?

Hi, have a seat. Which one did you need to finish? Can I see? Just, sorry. Oh, Amoeba. I'm going to put Student ... Student, can I put Student there? Because he needs to finish that one. Which one do you need to finish?

Students: This one

Teacher: One second, perfect. Right here. Human cheek.

Students: I need the paper.

Teacher: This paper? I'm all out. Can you draw five circles and I'll tell you what to label them.

Students: Teacher, I can't quite see anything with 40 I don't know.

Teacher: Oh, you're almost there. Oh this is the ... I think something's wrong with this one. Yeah, okay you can leave it at 10.

Human cheek. So Student, this is paramecium so I'm going to give you the name, ready? Let me make sure I can spell it. P-a-r-a-m-e-c-i-u-m. Hi



Students: Hi I need the partner cards even though I don't have a partner.

Teacher: I am out of ... Oh no I'm not. I think one is missing is from here but you ... Number 6 is missing. Maybe you can get number 6 from somebody. You can do it independently.

So the key thing, Student, oh that's a little hard to see.

Students: Yeah that's why I started drawing that.

[01:00:00]

Teacher: The key thing is, do you see something in that pink patch? Do you see like a darker shade of pink?

Students: Yeah. The dark side of the pink.

Teacher: Welcome to the dark side of the human cheek cell. What do you think that is?

Thank you ladies. Analysis questions while they're fresh. Oh which one do you need?

[01:00:18]

Amoeba? Okay, Student, you can switch. We have eight minutes until clean-up and then..

Students: We still have to do the partners.

Teacher: Can you come to Wednesday tutoring? Or, actually, Wednesday workday. You can work on it tomorrow and if you don't get it done, come to tutoring.

Students: Do you have anymore copies of ...

Teacher: Of which ones?

Students: Of the semantics ...

Teacher: No, but can you draw the five circles in your notebook?

Students: I finished it all.

Teacher: Oh, good. Okay, you can go back out and tell Teacher 2 ... If she wants to send somebody

Students: Teacher, can I go in there?

Teacher: Yeah, come on over.

Students: I did the circles.

Teacher: What's an animal cell that you won't find here?

Students: I don't [inaudible 01:01:04] cheek or something.

Teacher: So before you knew this was a cheek ... I have plant and animal and I have like, bacteria. What was the main difference? So, eukaryote, prokaryote, what was the main difference?

Students: [inaudible 01:01:22]nucleus[inaudible 01:01:19]they have different kind of cell wall and cell holes?

Teacher: So, that's in plants and animals, they have one thing and he was the commander of the cell, do you remember who the-

Students: Nucleus!

Teacher: There you go. So, that dark pink is what?

Students: The nucleus?

Teacher: Yeah, that is the nucleus. You're not going to see that in these other two over here. So, I want you to take note of that, okay? If you even want to label that.

Students: Do I do it?

Teacher: Yeah. Just a bunch of little dots. But notice how many there are of these two compared to these.

[01:02:00] This was what type of bacteria? Bacillus ... That's not what it looks like. You should be looking and drawing.

Students: I'm not good at drawing.

Teacher: Here, here space. Okay, you got it? Move on. [inaudible 01:02:18] Oh, here let me help you real quick. You're not going to do this one, you're going to do ... Yeah. Okay, so that's a Paramecium. Make sure you're writing your magnification level. This was at 10 times magnification. Try ... It's this guy ... I don't know if I'm saying it right.

Students: I can see perfectly with two eyes.

Teacher: That's good. In the microscope?

Students: Yeah.

Teacher: Oh, not at the same time ... This is the word.

Okay we have about five more minutes, so try to finish the activity you're working on.

Students: This kind of looks ugly[inaudible 01:03:08] at first.

Teacher: Paramecium?

Students: Yeah, it kind of looks gross, at first.

[crosstalk 01:03:13]

Teacher: Hi

Students: I'm circling the AQ's for 44. Is it okay if I come in somehow for tutoring, can I do it then?

Teacher: Yes.

Students: So gross ... The paramecium's so gross.

Teacher: You know where you find that?

Students: Amoeba.

Teacher: Amoeba. When you go hiking, like in river water. That's why they tell you not to get into the water if you have open cuts. Like leptospirosis, yeah. You got stuff like this in the water. But there are also helpful ones, too, so we need both of them. We need all of them.

Students: There's a little purple thing in here.

[01:04:00]

Teacher: That's him, that's the guy.

Students: What do you mean the guy?

Teacher: The amoeba.

Students: Oh, I thought you said amoebas.

Teacher: Amoeba.

Students: You know amoebas, right Student?

Teacher: Thank you.

[crosstalk 01:04:18]

Yeah. Well, you know. It just means he's going to have to come to tutoring, which is ...  
Yes, have a seat. You just tell me what you're looking at and at what magnification. The  
hard part is done, they got it in focus. Hi, yeah jump on in. So you're just writing down  
what you're observing. The name should be that one...

Students: [inaudible 01:04:47]

Teacher: Yeah I know, great. Thank you for being a problem solver and not asking me what to do.

Students: What is the name for this ...k

Teacher: They are labeled on the side.

Students: Should we just draw it?

Teacher: So you just draw it, they should be in focus for you.

Students: Oh my gosh, what are those cute little baby things?

Teacher: That's bacteria. Cute little baby things are bacteria. They actually make you really, really  
sick.

Students: Do I have to change this-

Teacher: No, we got it all in focus, so you guys are just rotating quickly.

Students: What about [crosstalk 01:05:21] What is it called? What is this one called?

Teacher: Bacillus. B-A-C-I-L-L-U-S.

Students: I'm ready for switching.

Teacher: All right.

Students: Teacher, is this actually bacteria or whatever that name is.

Teacher: Well, it's stained. This is the type of bacteria.

Students: So, put this in there?[crosstalk 01:05:54] Is this a bacteria?

Teacher: This is a bacteria. This is bacillus.

[01:06:00]

Students: Oh bacillus [crosstalk 01:06:00] ... Teacher, which one is this?

Teacher: That one is bacillus, yeah. That is a paramecium.

Students: [crosstalk 01:06:11]

Teacher: So, the point of this activity, as you're moving around, is just to make note of the difference between ... So, these two are your protist, these two are your bacteria.

Students: Should we write these down?

Teacher: I would. They might help you with those analysis questions. And then this is an animal cell, good.

Students: Are they dead?

Teacher: They are [mah-kay 01:06:35], yes. They are frozen and stained. So, it's cool, what you're looking at ... Do you see anything in here?

Students: No.

Teacher: That's what you were looking at.

Students: That's cool.

Teacher: And this can cause amoebic dysentery which is not fun and you can't even see it. So, scientists somehow decided, hey let's look at the water we're drinking and they found these guys. Crazy, right?

Students: Is this the name I can't... [crosstalk 01:07:02]

Teacher: Right here.

Students: I'm finished.

Teacher: Let me see... Human cheek. Human cheek goes in the back. These are protist and you can tell.

Students: They're purple.

Teacher: We're about to clean up.

Students: Oh, I wanted the paper.

Teacher: The paper I'm out of anyways, I'd have to make copies. But you can just make circles, it's just making circles. Can you tell Teacher 2 we're going to clean up in two minutes?

Okay, I'm going to ask microscope group to ...

Students: That's what it looks like to me.

Teacher: It does. We could be a little bit more quality. Like, when you see this one, that looks more like this one, because those are more circular.

Students: I want to see what bacteria looks like.

Teacher: You're looking at it.

Students: I know it's so gross.

[crosstalk 01:07:57]

I thought this was Bacillus I didn't know they were the same thing.

[01:08:00]

Teacher: That is, that is.

Students: Yeah, that's gross.

Teacher: Yeah, it's all around. [crosstalk 01:08:04] It's in your mouth, it's in your stomach. It's when you eat cheese, do you like cheese?

Students: I hate blue cheese.

Teacher: Well, do you like yogurt and cheese?

Students: Oh. I like ... oh, yeah.

Teacher: Then you like bacteria. You like eating bacteria.

Students: Does soap have?

Teacher: Soap kills bacteria.

Students: Oh, you should eat soap.

Teacher: Okay, folks, it is unfortunately the end of our work time. I hope you were productive. If you did not finish, you have a workday tomorrow, but that's for everything. That's either for this or your human body project. I won't talk at all tomorrow, I promise. I always say that.

Students: You just did like two minutes and a half.

Teacher: Oh, whatever ... If you have the cards please bring me your cards and sets. Microscope people, when you're done turn them off and unplug them for me. Take the slides and

put the slides on the towel. Textbook people can put away textbooks. Thank you!

Okay, let me stay organized. Yeah, you can actually take it out of the outlet for me.

Students: And is there a name for this one, too?

Teacher, how do you turn this one off?

Teacher: There's an on/off switch in the back.

Students: Teacher?

Teacher: Yes, one second. I'm trying to stay organized. [crosstalk 01:09:32] Were you able to write your categories, at least? Okay.

Thank you.

Analysis questions for homework then.

Students: Oh, I can't come to the Wednesday [inaudible 01:09:53] I'm sorry, I know it's [inaudible 01:09:55] It's called drama.

Teacher: Thank you, Student

Students: Do I take the slide out?

[01:10:00]

Teacher: Take the slide out and put them on the towel for me. If you can unplug them that would save me some time.

Students: [inaudible 01:10:11]

Teacher: You cannot take your notebooks home, but if you do work at home just do it on a separate sheet of paper.

Students: Student, you have to turn this one off.

Teacher: Oh Mr. T, they'll get it or I can get it later. Thank you, though. Student's got it, right Student?

Students: Can I just look at this one really quickly?

Teacher: Oh, we turned it off already. We'll have more time tomorrow.

Students: [crosstalk 01:10:37]

Teacher: You can still probably answer the analysis questions if you wanted to get a head start.

Students: I know, how about if I look up [inaudible 01:10:43] what these are?

Teacher: It's not as fun as watching it in person.

Students: If I don't do this I won't be able to do analysis questions.

Teacher: You can probably still do analysis questions without looking at that.

Students: Okay. Which ... The ... do you know what kind?

Teacher: That's a protist, that's a protozoa... Okay, thank you Mr. T.

All right, please have a seat ... Quietest tables will be dismissed first. Go ahead and get your homework folders out for me. Sorry, we're not quite there, homework folders.

Please, nobody tell Student that I almost dropped his heart.

Students: Student, where are you?

Teacher: Thanks, Student. Sell me out. Can you imagine how bad I would have felt? [crosstalk 01:11:43]

Students: Break his heart. [crosstalk 01:11:44]

Teacher: Oh, puns are fun.

Students: Puns for days.

Teacher: I would have felt terrible. [crosstalk 01:11:48] I wouldn't have felt that bad.

Students: [crosstalk 01:11:58] Pretend that this never happened.

[01:12:00]

Teacher: Yeah, you guys didn't see that, right ... Where the Men in Black have the pen.

Students: What?

Teacher: Never mind ... Yeah, guys your notebooks go on the white bookshelf. I'm missing one students notebook, so let's make sure we go ... I thought by six months into school we'd know where they go, but ... Reminders ... Okay, on your homework folders, just put your reminders please: model due tomorrow. All these in-class activities when are they due, can somebody tell me?

Students: By the end of school. [inaudible 01:12:37]



Teacher: Yeah, Student.

Students: Friday?

Teacher: No, you have all the way until next week, Thursday. So, we have workday tomorrow, we have presentations Friday and Tuesday and then we have a notebook check.

Students: [inaudible 01:12:47]

Teacher: This week Friday. Yeah, we're out of time. Actually, let me just throw this up for you then. Hold on. Eyes up here. This is going to be the other group's ... We're here. Your last day is here. So let me just say this, we're here, tomorrow models due, you'll have time to work on your presentations. Friday: presentations start, all day presentations. Okay? Tuesday: presentations. I'm not telling you what order, so everybody be ready by Friday. Okay? And then it's a weird Wednesday, so I see you here, we're going to do our last notebook check, when all these in-class activities are due and content quiz on the organs. It's a lot of work, but you guys are totally rising to the occasion, I really appreciate it.

[01:14:00] Tutoring, that's my last announcement. If you're struggling with anything or you didn't get to the microscopes or the cards by the end of class, come to tutoring. It's the last one of the quarter. 3:45-5:00 in Middle Earth. You can work on anything: microscopes, cards, models, projects, anything. Got it?

Okay, if you're feeling overwhelmed communicate with me, send me an e-mail, if something's not going to get done the best thing to do is e-mail me as soon as possible. Oh, feedback, there's only five of you who don't have feedback yet, I'm going to work on it right now, after class. So, if you haven't gotten an e-mail from me, that means your name starts with the beginning of the alphabet. I'm going to do it right now, thank you for your patience.

All right tables two and four and one, push in your chairs.

Students: [crosstalk 01:14:55]

Teacher: Yes, don't worry about him. Show must go on.

Students: Me and Student ... [crosstalk 01:14:59] Since she's doing her blood thing, none of the blood is actually going to be pumping through ...

Teacher: Okay. Hold on one second, let's talk ... Everybody else is going to push in your chair, thank you. I will take that into consideration, so that's not affecting your grade. It's junk that your model won't function when you tried so hard.

Students: I had to use a new machine to-

