‘Assessment for learning in KS3/4 Science –   
Anita and biology’ transcript

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ANITA KAPILA: OK, guys. Thanks for your patience. I’m gonna do my starter now. So could you please have your dry wipes open, please. Your dry wipes, if you don’t have them open.

NARRATOR: Meet Anita Kapila. She’s a biology teacher at Burnham Upper School in Slough.

ANITA KAPILA: your objective today is that you’re going to assess the assessment level of others. And you’re going to look at your own work later on to see what level you’ve got for your assessment. OK.

AFL helps me to find out where the pupils are at, and also it tells me what their weak areas are. So it could be that their weak area is biology or chemistry or physics. So usually there’s a kind of a weakness with someone. So we have subject specific assessments where we can actually assess how they’re doing. And hopefully, before we get to the SATs exam, we can then work on certain areas, say scientific inquiry, before they actually sit their SATs exams.

I’ve got some, I’m going to put some diagrams on the board. I’m going to put a label, one, two, three, four, five, six. And what you’re going to do is, you’re going to put in big letters on your dry wipes, what part of the cell it is. OK, so that one. Write it down, please. Nice and big so I can see it. Three, two, one, show me. Cell wall. OK? Cell wall. Now watch where the lines are, OK?

I would use Assessment for Learning in the starters, for example, by having diagrams on the board. They’d write with the dry board marker pen what the answer is, to say number one. And then when I say, show me, I get like a sea of answers. And I look around and it helps me to see who’s understanding the work and who isn’t. I can target my teaching and revision protocol accordingly.

Three, two, one, show me. It’s actually the cell membrane. Well done.

NARRATOR: Anita uses a strategy called the level ladder with her students, to aid them with understanding their own learning. The level ladder awards a grade to the pupils on their formative assessments for meeting specific criteria.

When a pupil does an assessment, OK, they have the level ladder, OK, under the task. And depending on how many criteria that they filled in for that level, then we grade them on a, we subdivide their level into a 3 A, B, or C. So 3A being like the lowest, and 3C being the highest. So if they fulfilled like one of the criteria, I’d give them a 3A. If they fulfilled two of the criteria, it’ll be a 3B. And if they’ve done more than that, it’ll be a 3C. If they’ve done all of it, then I can go on to the next level, which is the 4, and see how many parts of the criteria they fulfilled there.

So for example, if you’re working at a Level 5 level, you should be able to tell things apart, distinguish different things. Also, apply information from secondary sources to actually explain something. In order to get to a Level 7, they need to be able to link ideas. So for example, if we’re doing reproduction, where you learn about eggs and sperms coming together, and if you are then able to link back to the cell topic and say, actually they’re specialised cells, that’s a Level 7 ability.

NARRATOR: Today, the students are looking at papers from previous students and marking them using the level ladder.

ANITA KAPILA: I’m going to give you that ladder. You have a ladder that your worked from to do your assessment. I’m going to give you other pupil’s assessments. You’re going to be working in groups of about five or six. I what you’re going to do, you’re going to read the same assessment, all of you, in the group of five. Each group is going to have different one, OK?

The first thing you have to do is underline three things that they’ve done correctly. It’s always good to motivate the pupil by finding three good things that they’ve done. Even though the overall assessment might not be so high a mark, they’ve been commended for the things that they’ve done correctly. And then what I want you to do is, using the level ladder, I want you to give them a mark.

Now, 5A, 5B, 5C, for example, which one is the highest, do I normally say? Yes? 5C. And which one’s the lowest? 5A. So what I want you to do is grade it with the letter. So they might be a Level 6, but you have to decide how many things they’ve got correctly. OK? And so for example, if they’ve got one thing correct in the 6 box, they’ll get a 6A.

Getting them to grade past assessments is good because it enables them to see what we see, as members of staff. And it helps them to see what they need to do to move forward. And it also helps them to be neutral about it, because it’s not their own work. They’re not going to be overgenerous with the marking. They can actually mark comfortably.

STUDENT: Everyone read it, yeah? Right. So a cell wall, a hard and inflexible border that [INAUDIBLE]. Yeah, that’s right. A cell membrane, a flexible border that lets food and nutrients in and out. In and waste out.

STUDENT: That’s true, isn’t it?

STUDENT: Yeah, that’s true.

STUDENT: Yeah, that’s right.

[INAUDIBLE].

STUDENT: So they’re in Level 4 at the moment.

STUDENT: Right. Make a model of a plant that is labelled most parts.

STUDENT: Yes.

STUDENT: Make an accurate model, plant or animal cell, and have labelled all parts correctly.

STUDENT: No, they haven’t done that.

ANITA KAPILA: Why do you think you’ve been given that today?

STUDENT: So we know how to like assess our own work, and stuff.

ANITA KAPILA: Right. And is it helpful for you?

STUDENT: Yeah.

STUDENT: Right. So I think they’re Level 6B.

STUDENT: It doesn’t say that.

STUDENT: I’d say Level 6B.

STUDENT: What do you reckon?

STUDENT: 6B.

STUDENT: 6B?

STUDENT: Yeah, everybody’s deciding on 6B.

NARRATOR: At the moment, Anita’s year 7 class is studying cells. After this lesson, they’ll have an end of topic assessment, which will be graded and handed out to them with feedback.

ANITA KAPILA: When I finished my A-levels, I didn’t go straight to university. I worked in a lab in Norfolk Park, and I worked on umbilical cords for three years. And then I worked with a group of pharmacologists at the time, and that’s when I started my career in the pharmaceutical industry.

Now, what you’re going to do is you’re going to prepare your slides. Now you’re all professional at preparing slides now, aren’t you? OK. This is the sort of thing I used to do for a job. I was a cell scientist, OK? I actually feel quite upset when I can’t actually focus the microscope, because I think I used to do this for four years. Why is it I can’t actually get it to focus? And usually, invariably, it’s something wrong with equipment I’m using.

But I used to get paid for looking at something called NS0 cells. And we had to count all the white ones and count all the blue ones. And I used to have a little counter, and I used to click, OK? Count all the white ones. Count all the blue ones. Count all the white ones. Count all the blue ones. That’s all I used to do, all day long. OK? And I used to get loads of money for it as well.

I use my experience in industry to enthuse them into the subject. This is an amazing activity. Can you actually get paid for this? Yes, you can get paid for this. You can do forensics. You can work as a cell biologist. And they’re kind of enthused by that. I use stories to bring science alive.

STUDENT: We’re looking at cheek cells. We got a cotton bud and we put it on our cheek and we put it on the slides and we add methylene blue and you can see like the dead cells and the alive cells.

ANITA KAPILA: Basically, medium power is better, OK? Whereabouts did you smear, in the centre? What do you mean, you think so? I need to know.

STUDENT: Yeah.

ANITA KAPILA: Because I’m not going to find any unless you tell me which area it was in that slide. OK. There’s fantastic numbers of cheek cells here. Let me just see if I can see the cheek cells. I’ve had real trouble getting cheek cells. It’s been a nightmare. But I’ll try my best. OK. I can see one there. There’s just one there, can you see? People think that that’s a cell. It’s not. That’s the bubble edge. OK? You all get, oh, look, I’ve got a cell! No you haven’t. You’ve got a bubble.

NARRATOR: It’s time for year seven’s formative assessment about cells. Now they’ve marked a previous paper using the level ladder, they know the criteria they need to meet to progress.

ANITA KAPILA: So they’ve been asked to make model cell for the science museum, and an information cards to go with that.

STUDENT: I would probably give myself about 6C because I know most of the main parts of the plant cell and I can draw one. I can draw even one of the cells.

STUDENT: I think I would give myself like a 5B because I know lots about cells, but I think I need to learn a bit more about it.

ANITA KAPILA: The lower ability pupils be working to a 3 to 5, and the higher ability be working from a 5 to 7. And what they need to do is make sure that they’re always pushing themselves one level beyond their own capabilities. So if they’re a Level 5, they need to do what’s in the 6 box so that they’re always pushing themselves forward. They’re not just staying comfortably at 5.

When they’ve done that, I then take that in and I mark that. And I always like highlight three things that they’ve done correctly to motivate them. And we call that quality mark. That’s a policy that’s been brought into our school through one of our inset programmes. Some pupils, with this assessment, have actually done a lot better than I thought they would. They’ve actually, instead of just drawing an ordinary animal cell, they’ve actually drawn the specialised cell. So they’ve kind of pushed themselves to 6 like automatically, and quite a few have done that.

And that was quite interesting because I’d expect them just to draw the normal round circle for the animal cell and the nucleus and just label the parts and the functions there. But actually they’ve drawn sperm cells or red blood cells or ciliated epithelial cells, which is quite good. So they’ve tried to push themselves forward. So quite a few sixes I’ve got in this class now, which is quite good.

What I’m going to do now is I’m going to give you back your assessments. I’ve marked them already. And I’ve put 1, 2, and 3. What I’ve done is I’ve highlighted three things that you’ve actually done correctly. OK? And then I’ve also put your grades, what you’ve got, and what you need to do to move on to the next level. OK? [? Kaley. ?]

They read the comments and take it in, and hopefully they know what to do next time they’re challenged with a similar task. And then we then staple their assessment into their books so they’ve always got a record of their assessment levels. We also get them to report their grading onto a card, which we then keep so that we monitor how they’re doing.

STUDENT: I got a 6A. I think I need to memorise the parts of the cells a bit more so I know exactly where they are and what they look like and how they’re good at doing their job.

STUDENT: I’ve got a 5B. I think I did quite well on it, and I’m quite happy with my mark.

ANITA KAPILA: Every three weeks, or every six lessons, I’m required to put a green verbal stamp in the book. And what I do is I go around and discuss with a pupil, what do you think you need to do to move forward. And then they say, OK, I think I need to write in full sentences. I say to them, yeah, I agree with that. Write that down. And so they write that down. So in their books, not only do they have a comment from me, they have a comment that I’ve actually discussed with them in their books, as well. So it helps us to work smarter, and not harder.

OK, [? Kaley, ?] let’s have a look. So you can see the three things you’ve done correctly. Which three things have I highlighted that you’ve done correctly?

STUDENT: I labelled the nucleus and the vacuole correctly.

ANITA KAPILA: And then what have I done here?

STUDENT: You’ve told me where I’ve gone wrong and the proper answer.

ANITA KAPILA: OK. So what should go in between organ and organism?

STUDENT: The organ system.

ANITA KAPILA: That’s right. OK. And then I’ve given you the grade over here, and what you need to do to move forward. So what do you have to do?

STUDENT: Why is sperm cell Is good at its job? Label all parts and describe function of each part. No chloroplasts in root hair cell.

ANITA KAPILA: Yeah. And why do you think there’s no chloroplasts in root hair cells? Because there’s no what, underground? Just imagine what it’s like being –

STUDENT: Light.

ANITA KAPILA: There you go. OK? So you only find chloroplasts where it’s light. Is that helpful?

STUDENT: Yeah.

ANITA KAPILA: Good. And then as you can see, you’ve got a grade 5B. And that’s what you need to do to move on.

STUDENT: Yeah.

ANITA KAPILA: So what’s the function of the nucleus, then?

STUDENT: The nucleus controls the cell.

ANITA KAPILA: And what about the cytoplasm? What does that do?

I think that since we’ve been doing this kind of assessment, it’s helping them to aspire to something more, to push themselves. And I’ve heard kids say, I don’t want to be an Level 5 anymore. I want to be Level 6. So that’s quite nice to hear, actually them being enthusiastic about moving forward.

And that’s the whole point of these type of exercises. That actually, it’s giving them motivation to move forward. Whereas, if I’m not giving them any guidelines to move forward, they’re just going to stay where they are. They’re going to stay static. I actually think, although it’s a lot of work, it’s actually beneficial to them.