Mini Case B: Modeling Cell Division

Email 5

RE: Cell division unit?

MrBrown@schooldistrict12.net

Sent: Wednesday, February 10, 2016 8:06 AM

To: MrsDow@schooldistrict12.net

Caroline,

Can you tell me more about the modeling activity? In the past I have had students make physical models with candy to show each step of mitosis. However, I felt like most students just tried to recreate the diagram in their textbook, and I do not think they understood the process of cell division very well. They did well on the multiple choice and T/F test questions that asked about what happened during each step of mitosis, but they didn't do so well on the open response questions about the process of mitosis. I am not so sure that knowing all the details about the steps is as important based on what I read on the NGSS web site:

HS-LS1-4. Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms. [*Assessment Boundary: Assessment does not include specific gene control mechanisms or rote memorization of the steps of mitosis.*]

What assessment did you do with the modeling activity?

Bill

Email 6

RE: Cell division unit?

MrsDow@schooldistrict12.net

Sent: Wednesday, February 10, 2016 12:17 PM

To: MrBrown@schooldistrict12.net

Bill,

The modeling activity in Lesson 4 uses diagram models rather than physical models. And students get a chance to revise their models, which gives me a good chance to check their understanding. You are right that memorizing the steps of mitosis is not very important in NGSS. But which class were you going to do this in, Bio I or Bio II? I have used it in both, and since Bio II is an elective class I do expect students to know more details about what happens in the cell at each stage of mitosis. This activity is flexible because it allows me to easily modify what level of detail students include in their models. If you stop by after school, then I can run through the activity with you to show you how it works.

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