Financial Literacy in Grade 11 Mathematics and Business Studies –
Mathematics and Financial Accounting Fundamentals MCR3U and BAF3M
Financial Literacy and Mathematics: Understanding Annuities

Robert Spadafora, Teacher Mathematics: What is an annuity? It can be in layman's terms, it doesn't have to be exact definition.

Student: Payments made at regular intervals.

Robert Spadafora: Very good. Payments made at regular intervals. We'll work through a couple of examples, and then you'll have your exit slip and your homework to take care of.

In the math course is financial literacy, and specifically related to what we're doing in this grade 11 course, is a direct connection for the kids. They seem to understand, because they understand money, they understand one day they're going to have to save money, and they really do have an appreciation for it. And I think it's very applicable for them.

And here's our annuity formula. So remember the A is, we've covered these variables often now, no real need to recap them. Everyone in this class is confident with that. A is our end amount, R is our regular payment. Interest rate per compounding periods are I, and our N is our number of compounding periods for the life of the investment. Okay? That's good, Daniel. Any time there's math, even though it looks like a simple fraction, show your work. Why do we have a two there? Good for you. And remember, be strong with your calculators, right? No intermediary answers. Your calculator has the ability to handle that for you. Once you believe you have an answer, check with your partner. Remember to start with finding your variables. That's good. That's good. Eugene's remembered to put a conclusion down. We use conclusions every time we have a real-life scenario.

Catherine Temple, Department Head, Math and Business: Students should see that there's a correlation between financial literacy in every discipline, and it's just not a matter of learning formulas, applying formulas, but rather understanding what those formulas mean. We shouldn't be teaching the students just plug in for the N, plug in for the I, plug in for the principal in the formula. They should be understanding what do those letters mean. Why are you learning this formula? Why is it so important to your future?

Student: What I find most interesting about this course is how all the little variables and stuff come together, and they come and they just spit
out an answer at you, and then you realize, like you try and logically find out how that fits into life.

Robert Spadafora: The one that we haven't touched on yet is this one here called present value. It's similar to principal, but it includes regular payments, i.e., it's under the frame of an annuity, as opposed to just simple compound interest with a lump sum. On terms of developing the general problem-solving skills, the process-type skills, the financial math lends itself to that very well. It's not just, you know, here's an equation, for example, and then solve the equation for an answer, which may be traditional algebraic-type math. A lot of the scenarios are framed around real-world scenarios, and then they're not necessarily told what to do. They have to think, okay, what do I do with this investment? Where does it fit into potentially the financial math I have to do? And there's a problem-solving process that goes on with that. And I think Sierra's talked about this very often, and how she wishes this unit was done earlier in the course, yes?

Student: Right. 'Cause you get to apply it to real-life situations instead.

Robert Spadafora: Yeah. Yes, Diego?

Student: I think you're off by a cent. I went up all the threes.

Student: I added like 70 threes and I got...

Student: Yeah.

Student: Don't you always want more money than less? It's threes.

Robert Spadafora: The good thing about this is, our cases, our word problems are to be framed with the same financial vocabulary. So we're improving our literacy. We're further going to understand what compounding means, what compounding rate per period means, what interest rate per compounding period means. Those things don't change. What's changing is the calculation, finding out how much we have at the beginning instead of how much we have at the end. Regardless of the dollar amount, if it was 50, to set up annuity for $100, for $200, whatever it may be for you, is this a propos, or is this possible for everybody?

Student: No.

Robert Spadafora: Why, Diego?

Student: Because it could be too much.
Robert Spadafora: What could be too much?

Student: How much you're paying per month.

Robert Spadafora: Yeah. So Diego, continue, or if someone wants to add, what might prevent, or what might make this too much per month? What might prevent a parent, or even yourselves from trying to set this up for yourselves, from being able to do this and be able to have $50 a month for the next five years?

Student: If you lose a job.

Robert Spadafora: Yeah. Anyone else?

Student: Maybe certain extra expenses you gain later on?

Robert Spadafora: Yes. Such as?

Student: Such as maybe your parents have another kid, or something like that.

Robert Spadafora: Very good. Those are all excellent answers. Yeah. So anything we do in this course, not just today, and I've mentioned this before to you, that it depends on your situation, your social situation, your economic situation. You think of people maybe even in other countries, other regions of our city even, right? Think of how likely or unlikely it would actually be for a parent to be able to come up with almost $2,500 at the beginning so their son or daughter could have $50 a month for the next five years? Sometimes we need to reflect on how fortunate we are in our situations to even be thinking that this is possible for us, or even to be thinking it's not enough money, right?

Student: I think this course puts how to manage money into perspective, I guess. You don't really use these equations so much now, because we're not at that stage where you're buying a house, or you're spending 250,000. But even small things, like it teaches you how to apply it, so to say.

Student: Since I'm taking accounting, this course helps us analyze how to use our money properly, how to invest, how to pick the better things, such as a company, a car, like what's worth more, and what's a better choice.

Gina Iuliano Marrello, Program Co-Ordinator, Math & Business: I'm very passionate about financial literacy for many reasons. For one, I truly believe that it is an area that students need to know more about, and need
to gain confidence in, because I think it's important that as educators, we prepare our students for the world, for the world of business, for the world of living. Moving into secondary, students also have decisions to make of a financial nature, in terms of spending. And then moving into the senior grades, they'll start thinking about how they'll pay for a postsecondary education, and thinking about how they will manage as they maybe plan to live outside their family home. So there's a lot of decisions to be made in terms of needs and wants, and how to budget the money.

Student: Saving money and putting it in the right account, and how much money and what interest rate, it's really smart to know what you're doing so that you can save the most money for yourself. Teachers can help students by maybe just applying what they're teaching to what we do in everyday life, and how what we learn at school affects us in all walks of life, in work, at home, when we go out, everything like that.

Financial Literacy and Business: Decision Making and Investing

Mirella Evangelista, Teacher, Business Studies – Accounting: Today's lesson, we're going to take some money. We're going to pretend we're the venture capitalists, so we talked about what that is. We're the venture capitalists, and we're wanting to invest in a company. You need to learn how to manage your money, and we see it both on a personal level and on a business level. And in the course, I teach them that what they learn in business also applies to their real life. What other things would you need to consider when you're looking at, let's say, in your either personally, meaning you're going forward and, or in a business situation? What other information would you need to know?

Student: There are a couple ratios we've been looking at, current ratios, capital ratios, to see how successful the business is and how quick they can pay you back your money.

Mirella Evangelista: And that will help us with the industry, right? So if we know the industry information, those ratios. But we've talked about quantitative. Let's flip gears into that. What was that other cue that we talked about in the past? Adam?

Student: Qualitative.
Mirella Evangelista: The qualitative analysis, right? And what factors, on a global scale, would you need to know as to whether or not this is a good time to invest?

Student: Whether people want what they're buying or selling?

Mirella Evangelista: Okay. So if there's a demand. The state of the economy might be another reason, right? If the economy is on a boom or everybody's buying, then maybe now is a good time to open up a business, right? You'll be a little bit more profitable. We've talked about other factors, reasons why we might not want to buy a particular company as an investor. Does anybody remember what we talked about?

Student: It can be quite expensive to operate a business, and if things don't turn out the way you like it, then you're going to be in debt with a lot of money.

Mirella Evangelista: Why wouldn't things turn out necessarily the way we like it?

Student: Maybe you did some bad financial planning, or maybe you didn't use your money wise enough to help the business.

Mirella Evangelista: Okay. So it's important to see the plan of a company in order to see whether or not you agree with it. We talked about some companies in the world that don't necessarily hold the same values as we do. And those are good enough reasons, those ethical reasons that we've talked about, are good enough reasons why we might not want to go ahead and invest in a company.

Catherine Temple, Department Head, Math and Business: It's a life skill. Learning financial literacy is a life skill. This is something that they'll take with them in the future and apply to whatever career they pursue.

Student: What we're doing now is analysis. So it really helps to think you more. It really advances your thinking skills, so you're more into analyzing stuff.

Student: The thing that's probably been most important to me in this course is taxes, because I had no clue about taxes. I just don't get them. And so now I have a better idea of taxes. And that's really why I think it's best for me, because I know I'm definitely going to be using that, even if I don't do anything in accounting.

Student: The most interesting thing that I've learned in this course so far is that you're able to look at a business and see if it's going to be good, if it's going to help you in the future. Because I think, well,
personally myself, I plan on owning a business later in life. And I think that this information that we're doing right now, it's going to be very valuable to me, because I want to know what I'm buying and what I'm going to get into, and how that's going to help me later in life. I really like what our teacher's doing, because when we have an example in class, she can relate it to a real-life situation. When I get out in the working force I'm going to have to learn how to spend my money wisely, and how to make the money work for me, like how to keep on gaining more and more money so I can live a good life. So I think this class really helps give you strategies, so that when you go out to the working force, how to keep track of your money and how to be more in touch with the business world. So people can't swindle you and stuff, because you know how the business world is like from a younger age.

Student: I think that it's important for students to learn how to communicate amongst themselves, because that way it can lead you into the future, if you're going into business or any job, that it helps you deal with group members, and helps you solve situations easier if you know how to communicate with other people.

Student: I think that the most important skill that you actually learn in a business class is actually how to talk to people, how to manage with other people, how like to communicate better with other people. Not how much like the numbers, but how to speak with other people, selling, buying, and being very good at it, because that's really all it comes down to. It's actually not about the numbers, but how good you sell it.

Mirella Evangelista: With all financial decisions, and especially with respect to money, in deciding how much you need for what you want, you have to have a plan. So with a goal in mind, they can work their way backwards, seeing where they're at and how to get to where they want to go. They might have to start with nothing, but then eventually they realize that after they earn a bit of income and save for what they want, they'll get to where they want to go, to their final goal.

Gina Iuliano Marrello, Program Co-Ordinator, Math & Business: In order to allow teachers to have a better understanding of where financial literacy falls in their curriculum, I think it's really important for staffs to get together and talk about different curriculum expectations that exist in their own curriculum documents right now. So it needs some attention to sit down as a staff, to sit down as a group of educators, even in subject areas to look at that a little bit more closely. I know that the ministry is putting out a Scope and Sequence document that will actually outline these items, and so educators will have to spend a bit of time looking at that, and then going back, cross
referencing to their own curriculum document to see the connections. A lot of discussion needs to happen at the school level, at the board level, and also in the classroom talking to students and pointing out some of the areas where financial literacy exists.

Mirella Evangelista: I was just having a conversation with a student who has a learning disability, and the reason I realized this, or where it's prominent, is the fact that when she transfers over numbers they're not transferred over accurately. And she's transposing the numbers, the figures as well. So 49 becomes a 94. Holding her finger on that first number, and then copying it down onto the balance sheet without lifting up her finger, and she's to triple check it, so it's not just once transferring it over, but double checking and triple checking before she actually lifts her finger off that. So there are tips that, if put into practice, if they become habit, they're lifelong tips for them, and they are appreciative. They can manage to do what everybody else takes for granted.