[MUSIC PLAYING]

INTERVIEWER: Hello, and welcome to the Student Hub Live. In this session we're talking about living as a smart student. Now, even though most of us studying with the Open University may not be that young, we all like a bargain, and it's good to use our academic skills in everyday life to make sure that we're getting the best deal.

So joining me is Charlotte Webb from the department of mathematics. Thank you for coming along, Charlotte, with your shopping bag. Now you took part in our math skills builder a few weeks ago, and you can watch that on the catch-up if you missed it, where we were looking at how to use math skills in everyday life. And it was pretty important, and it struck me as a very good idea, that you could come along and show us how to use some heuristics and some simple math tricks that we could all apply, and we did apply them all very well in the end, I think, to make sure that where getting the most for our money.

CHARLOTTE WEBB: OK, well, I thought I'd bring in some food, because, you know, who doesn't like food.

INTERVIEWER: Oh yes.

CHARLOTTE WEBB: So it's kind of obvious to have a look at prices when you're buying things at the supermarket. But sometimes we can sort of--

INTERVIEWER: You need to show them up as well.

INTERVIEWER: Of course. Sometimes we can be a bit confused by prices when you have different sized packages and whether you're getting the best deal. So this one is kind of a basic example. We've got here one kilogramme of porridge and we've got 500 grammes. So hopefully most of you would recognise that this is twice as large, and so you're looking at doubling the price.

INTERVIEWER: Yes.

CHARLOTTE WEBB: So in this case, as you might expect, buying the bulk is better value for you. So we can see that it's 99p here, and if we bought two of these, we'd have 1 pound 30.

INTERVIEWER: Now we've got some widgets that are on the screen for you. And these are interactive tools

that you'll see if you're in the Watch and Engage option. On one of these says, which packet is the best value for money, A,B, C, and then we've got some various other questions. We'll be working through those as we're going through the session. So you may not be able to answer them now, but you can have a go if you want to, and change your mind later. But to select those widgets, all you do is you click on the widget, select the option that applies to you, and then you close it, and then you'll be able to see what everybody else has said as well.

CHARLOTTE WEBB: OK, so I thought I'd bring another example where it's not so obvious So here we've got two packets of hot chocolate. The same brand, different sized packaging. This one is 154 grammes and this one is 220 grammes. So if you're looking, at first glance, it's not like the porridge, it's not sort of obvious. It's not twice as much. And it's kind of hard to tell which is better value. So what I would recommend in this case is look at a unit value.

INTERVIEWER: OK.

CHARLOTTE WEBB: So that can either be one gramme in each package or it could be 100 grammes or whatever. So in this case I'm going to have a look at how much this packet would be for 100 grammes, and how much this packet would be for 100 grammes.

INTERVIEWER: So you're getting a base level so that you can then compare it, OK. And this is something that I guess you would be doing in math, isn't it, to convert things to a level that you can actually analyse like for like?

CHARLOTTE WEBB: Yeah, so it's basically looking at ratios. So it's looking at what is the ratio of price to grammes. And we're going to use a common value of 100 grammes. So for example, for this one, if I want to turn 154 grammes into 100 grammes, I'm going to divide by 1.54.

INTERVIEWER: OK.

CHARLOTTE WEBB: So if I divide my 2 pounds 79 by 1.54, then I get--

INTERVIEWER: Very clever.

[LAUGHTER]

CHARLOTTE WEBB: Yeah. This one I did earlier so I didn't have to remember it or calculate on the spot. So I've got 1.81 for that one for 100 grammes.

INTERVIEWER: OK.

CHARLOTTE WEBB: And for the other packet, same thing. If I want to turn 220 grammes into 100, I'm going to divide by 2.2.

INTERVIEWER: Yeah.

CHARLOTTE WEBB: And again, I'm going to get my price per 100 grammes.

INTERVIEWER: OK.

CHARLOTTE WEBB: And now I can see quite clearly which one is better value.

INTERVIEWER: OK

CHARLOTTE WEBB: So basically the idea is that you're comparing like for like, as you said. So it might be 100 grammes, it might be 10 oranges, it might be a six-pack of drinks, but you want to compare the same volume or amount of each product and see which is the best value.

INTERVIEWER: So this is a basic explanation of why ratio matters. So student studying mathematics might come across that as a sort of subject and think oh, what's that all about, and this is why it matters. Now the supermarkets are often using these equations, aren't they, on labels and packaging. Do many people know about that?

CHARLOTTE WEBB: I think more people are getting aware of it. A lot of the time, you do have the-- well, they are required to give the unit price in some description underneath, but it's usually very small, and sometimes tags get moved around and things in the supermarket, they're are always easy to find, and sometimes when there's offers on, which is quite frequent, they don't actually change the unit price. So it is worth just knowing how to do it.

INTERVIEWER: Absolutely.

CHARLOTTE WEBB: And if you've got your phone on you and you can do a quick calculation, then, just takes no time and makes sure you get the best deals.

INTERVIEWER: Perfect. Lovely, I like it.

CHARLOTTE I thought, before we show you the widget question, I've got another example, which is very

WEBB: similar. But this time looking at three different sizes. So this is going to be very similar to what the widget question is going to be about. So we've got here one litre, 2.5 litres, and five litres. So again, I'm going to use the same principle as with the hot chocolate and I'm going to find out the price for one litre for each packet or tub of paint.

So the first one is already in one litre, so great, don't have to do anything. It's that one. The second one I'm going to divide 15 pounds 80 by 2.5. And the third one I'm going to divide 26.5 by five. Now I've calculated these exactly, but one thing I would say is when you're out and about and you don't have your phone on you, you can use estimation and try and get a rough idea. So you can think about rounding this up to 16 or even 15, if it's easier to divide by the number that you've got. So estimation can be a really useful way to work things out quickly and get a rough idea.

INTERVIEWER: Yeah.

CHARLOTTE WEBB: But if we did have a calculator handy, then we could calculate the price per litre, and we can see that as you might expect, the more you're buying, the cheaper it's going to be. So with that in mind, I'm going to pop up the widget question, which is similar kind of idea, so hopefully students can use the same principle.

INTERVIEWER: So the question is which package is the best value for money, and your choices are A, which is this one, B, and C.

CHARLOTTE WEBB: Yeah.

INTERVIEWER: Sophie and HJ, how are people enjoying the session? I know, Sophie, you're a math student, so you are, needless to say, finding this very interesting, and also you're a keen shopper.

SOPHIE: Yes, so it works for me in every way, and I do actually do this when I food shop all the time, so any excuse to do a bit of number crunching and to make it worth my while is great. Stewart did ask if I use it to be a better bargain hunter. I think I use it to justify buying things. How many wears will I get out of this? How much is it per wear, yeah.

INTERVIEWER: Should I buy more, it's much better value.

[LAUGHTER]

SOPHIE: Yes, so I definitely do. We have actually have some selfies and things in, as well, and some study buddies that we keep putting off. So please, if you've got any pictures, your study buddies, you study spaces, please send them in. So you've got Milou here from yesterday. He was from, I think [INAUDIBLE]?

HJ: Yes.

SOPHIE: Sent that through. So that's her little dog.

HJ: We were told to tell Dave that it is Milou, 'cause we talked about Tintin, didn't wee-

SOPHIE: And Snowy.

HJ: --and Snowy, and it's the original French translation. So Stweart, I know you're watching, so if you can calculate those two points back for that one, just to give us a good final score.

SOPHIE: I won fair and square in that [INAUDIBLE]. I was very proud of my score. I'm not having Team Home take this from me. So we've also got Phil's study space here, which looks very [INAUDIBLE].

INTERVIEWER: That's very nice.

SOPHIE: Three screens. I'm quite jealous. I think I might have to up my game. And we've got Noelle here, who joined us yesterday. I haven't seen her on just yet, but hopefully we'll see her a bit later on. Just a couple more. We got another study buddy, which is super cute. This is Melissa's study buddy called Amber with little glasses on, and she's just adorable. I love that. So please feel free to send all of your selfies at studenthub@open.ac.uk.

INTERVIEWER: And what will you send back, Sophie?

SOPHIE: Loads of things.

HJ: We've got loads of really cool things that we picked out. So if you remember to send your address as well, because, of course, it's only fair.

SOPHIE: We you need your address, though, so please do send that through.

HJ: We've got really cool posters and cards and stuff from the BBC TV series that they do.

SOPHIE: We might have some calendars left as well, which we haven't got to show you at the moment,

I'm afraid, but we do have some study planners which would be nice to send over to you as well. So send through to our email along with your address, and we'll try and get those through to you.

HJ: And just as a final point. Stewart's been doing the math and Team Home are on 1,542 points. So--

SOPHIE: I refuse to believe that, I'm afraid. As a mathematician, I would say that is wrong.

INTERVIEWER: Right. In other words, they still won.

[LAUGHTER]

Thank you for that, Stewart. You can be our official scorekeeper next time. OK, Charlotte. So. We're going to then see what people have said in terms of best packet of value. Would you like to know people have said?

CHARLOTTE WEBB: Yes, please.

INTERVIEWER: OK, let's see what the widget says. So I hope people voted on this. The answer that everyone is saying at home is 67%. Are they right? 67%, sorry, have given the answer of C.

CHARLOTTE WEBB: Of C. So, well, in my-- let's have a look at the answers and we'll see. So we've got here 500 grammes at 3 pounds 15, we've got 375 grammes 2 pounds 85, and 250 grammes for 2 pounds and 5 pence. So if we have a look, I think maybe the A, B, and Cs might have been the wrong way around, perhaps, for the students. But--

INTERVIEWER: Oh, maybe, OK.

CHARLOTTE WEBB: The large packet was 3 pounds 15.

INTERVIEWER: Stewart will probably contest this anyway.

CHARLOTTE WEBB: We're looking at it terms of 100 grammes, so if we divide the 3 pounds 15 by 5 then we get 63p. If we've got the 2 pounds 85 divided by 3.75, we get 76p, and 2 pounds 5 pence divided by 2.5 is 82p. So the large package is the best value.

INTERVIEWER: As is often the case. Buying in bulk sort of has some rewards in terms of the packaging, I

suppose you could say. Sophie, did people have those round the wrong way at home? Are they correct in all fairness?

SOPHIE: I don't know.

INTERVIEWER: You've been too busy talking about that quiz. Now pay attention.

SOPHIE: Stewart's called me a math geek and a sore loser, so I'm just trying to think of a really good response.

[LAUGHTER]

INTERVIEWER: I appreciate you've got lots of things to do on the hot desk, that's fine. Let's do some more math, Charlotte.

CHARLOTTE WEBB: Well, before we move, on just to say that obviously it is better value, generally, to buy a bigger packet, although not always. You have to check. But it's not better value if you're going to let things go off in the cupboard. So obviously if you're only going to use a small pocket, then it's better to buy the small packet, because you don't want unwanted, wasted food.

OK, so a very similar question here. We've got an eight-pack of cola and we've got a 12-pack of cola. So this is another widget question for students to have a go at, thinking about the unit price. So you might like to look at one can, or you might want to look at-- eight and 12 both have four in common, so you might like to look at a pack of four, how much that would cost if you compare those two.

INTERVIEWER: OK, this widget is very clearly labelled, so no excuses this time. So we want to know whether you think the eight or the 12 pack represents the best value for money. So you can vote on that by selecting the one that you think is correct. And then you can see where everyone else is voting, too.

Right, let's see if the results are in for that. Has everyone has a go to look at that. OK, so we've got 67% saying that the 12-pack is the better value for money there. They're listening to you, Charlotte, but are they right?

CHARLOTTE WEBB: Yes, yes. Again, some people may be starting to get the trend of the larger packets generally are a better offer. It's not very much difference, I have to say, so if you only wanted eight, I would go for the eight-pack, because you are only getting two pence cheaper per can for the

12-pack. So if you are not going to get through it, then it's not so much of a big saving.

So sometimes it's actually worth saying, is it worth it, is the saving actually something that's going to make a difference, or is it so little that it's not worth my while.

INTERVIEWER: Math and common sense, isn't it, combined together, yeah.

CHARLOTTE WEBB: Of course, of course. So definitely think about things like whether you're going to use it. Think about things like does it matter about the brand? If you're going to buy the cheaper brand but actually you don't like it, then it's not really a bargain. If you're buying things that are on offer but you don't ever use them, then it's not really a bargain. So the smart shopping as well as the math there.

INTERVIEWER: Excellent. Thank you. Have you got another question for us?

CHARLOTTE WEBB: Yes. Well, the other questions I was wanting to find out was whether students are actually going out and looking for these in the shops, or whether they're just buying things that they like. Are people actually aware of unit prices? Are people actually looking for bargains? So I'd be interested to hear from the students.

INTERVIEWER: Because we've got a lot of students here who are at Level 1, and that the majority of students, when we last checked, was studying science, technology, engineering, and math. So they may well have different views on this, that students studying other areas may not be quite as savvy in. So let us know if this is something that you are currently doing, and also if you are aware of some of these mathematical terms and concepts and how we're applying them, because a lot of them are a lot more complex and can be applied in other situations, albeit shopping is a very nice, neat example that does relate to everybody.

Sophie and HJ, are you chatting about food or are you chatting about math?

HJ: Well, George [INAUDIBLE] saying that when you buy a big bag of crisps it looks too much, but you open a bag and find it's half full, and you really needed two bags. And we're also talking about looking at units. It's really hard to find all the comments. If it's going a bit quick, like it is for me, there's a little pin button to the right where you can find it, but Angel says always looking at the weights and trying to do some mental arithmetic, which is not my strong suit, but I'm glad someone there can manage it.

INTERVIEWER: Thank you. Charlotte, these supermarkets are often finding very clever ways of encouraging

us to shop, so buying in bulk with having larger prices. Having the end of aisles and things at eye level so that they appear more attractive. So there are lots of tricks that we know that supermarkets and marketeers are using to attract our attention.

But this idea of buy one get one free is quite a common one, isn't it? And as you say, if you got too much of something, it's not really a bargain. We asked our audience whether they thought that a BOGO, buy one get one free, is always a good deal. Now they have been voting on this. Would you like to know what they think now--

CHARLOTTE WEBB: Yes.

INTERVIEWER: --or would you like to-- OK. So 91% of them have said no.

CHARLOTTE WEBB: OK. Interesting.

INTERVIEWER: What are your thoughts on that?

CHARLOTTE WEBB: I would be inclined to agree with that. So obviously, if you're paying a standard price for something and you do buy lots of them, and the next week it's at the same price, buy one get one free, then great, that's a good deal. But what does happen in a lot of shops is that the prices fluctuate, and the price might go up a few days before the buy one get one free offer comes in, and that's perfectly legal, because as long as it's been on sale for that higher price for 24 hours, then that's fine.

So you do have to be a little bit aware of that, just to make sure how much was it before the buy on get one free deal, and is it a good deal. And equally, is it something you actually want lots of, or are you just buying things, do you end up with a basket full of things that you don't normally buy because they're on offer?

INTERVIEWER: Or even a brand that you think, oh, I'm swayed to buy that brand because I'll be getting two of those, but it may be more expensive than the one you would have normally purchased anyway.

CHARLOTTE WEBB: Yes, exactly. So there's lots of things like that to look out for when you're shopping. And outside of shopping, because we talked a lot about supermarket shopping, there's lots of other things that you should be looking for deals on. Things like loans, insurance, mobile phones,

anything like that where there's lots of competitors out there, you want to be looking for a good deal. So I thought we could have a look at some mobile phone tariffs.

So these are just examples. I haven't taken these from real companies, but they--

INTERVIEWER: Made up.

CHARLOTTE WEBB: They represent the sorts of deals you might get. So let's just assume that they're all the same price, 25 pounds. So you're paying the same monthly fees for your mobile phone. And the question is, basically, which is the best deal? So you can see they've all got different incentives. The first one has got 300 free texts and 300 free minutes, second one has got 500 free texts and 200 free minutes, and the third one has got 1,000 free texts and no free minutes.

So this is a really important example to remember that it depends on what you actually are going to use. So if you're going to use 300 free minutes and 300 free calls, then you're not going to pay anything extra. So that's going to be the best deal for you. And if you don't make any phone calls, then company C is going to be the best deal for you.

But I wanted to look at something where you'd have to do a little bit of calculating, so we've got here--

[LAUGHTER]

Yeah, I would. We've got here, if you use 700 texts and 300 minutes, which should be the best deal? Now for me, looking at it straight away, it's not obvious. I can't sort of go, OK, that one's the best deal. I think I need to start having a look at what it's going to cost me.

INTERVIEWER: Are you going to get us to do those unit comparisons again?

CHARLOTTE WEBB: This is not quite a unit comparison, because-- well, I suppose we're looking at-- we are looking at how much it costs in this deal for 700 texts and 300 minutes. So it's kind of a unit deal, yeah. So if we have a look at the breakdown of what we need to calculate.

With the first company, you need 700 texts and you get 300 free. So that means you actually have to pay for the other 400 texts, and they've given a rate of 5p per text. So just some simple multiplication. So 400 text times 5p, and that gives you 20 pounds. And then the calls, while you only need--

INTERVIEWER: I like the way you kept the units consistent throughout the calculation as p's.

CHARLOTTE WEBB: Yeah, well, it is easy to get mixed up sometimes. So it's just worth remembering that, obviously, when you're doing these things, you've got to convert back into pounds, or you can keep it in pence if you like, but it's a bit harder to see what value you're getting.

And then this person doesn't have to pay anything extra for phone calls. So they're just paying that that 20 pounds on top of the original 25 pounds. So that deal's costing 45 pounds.

The second deal, you get a lot more texts free, so you only need to pay for 200. Same thing, multiply by 5 pence, and that's going to cost you 10 pounds, and then we need to pay for some extra minutes. So again, they've given a rate of 15p, so that's an extra 15 pounds on top. And so you're adding another 25 pounds, which is quite a lot, actually.

And if you are sometimes-- if you're buying a new mobile phone and you don't know how many minutes you're using, it's worth having a look at your previous bills before you start a new contract. Because if you are paying, quite often when they have free minutes, the extra minutes are more than they might have been.

INTERVIEWER: When I do this, I actually have asked my mobile phone company, and I'll say how many do I normally use, and they often have a calculation there, and they can tell you, well it's averaged this, and this was on your last bill. So they're able to supply that information for you if you ask for.

CHARLOTTE WEBB: It's very important, because I know that when I've gone into phone shops, you do get overwhelmed with all the different deals and what's going on and--

INTERVIEWER: You think that seems like a lot or not a lot.

CHARLOTTE WEBB: Yes.

INTERVIEWER: Difficult to quantify, isn't it?

CHARLOTTE WEBB: And often, as this is demonstrating, the fee that you're paying per month isn't actually what you end up paying. Quite often there's extra expenses.

So in the final company, you're getting-- you don't have to pay for any texts, but you've got 300 text, essentially, that you're not using. So it seems a bit of a waste. And then you don't get

any free calls, so you're having to pay 10p for each of those minutes, which comes to 30 pounds. So in this example, company A would be the cheapest.

But of course, if you didn't use any minutes, company C would be the cheapest. So it does depend person to person, and it is really important to have that in mind when you're going shopping for these things.

INTERVIEWER: Exactly. OK, and that's a really useful example, and as you say, it wasn't obvious at the beginning, because I thought that B would have been the better one just looking at it, you know. Excellent. Thank you. Sophie and HJ, how's everything on the hot desk?

SOPHIE: Good. We had a couple of conversations going on, one about shoes, and the other, actually, about math.

INTERVIEWER: [INAUDIBLE]

SOPHIE: Amanda did mention that when it comes to mobile phones, it also depends on things like network coverage, so extraneous variables in math are always a problem.

HJ: We were talking about-- I've been told there's buy one get one free offers on shoes in some places, particularly America, so that's--

[LAUGHTER]

That's what we might need to be aware of. But we're also talking-- oh, I've lost it. Yes. Ivan said earlier that when buying food he just completely forgets the numbers and just finds out what the biggest bag is. So I don't think it's quite sunk in [INAUDIBLE] at the moment.

INTERVIEWER: Never shop when you're hungry. You'll always go for the biggest bag.

CHARLOTTE WEBB: It's interesting, the comment about the shoes, because I know there are some deals out there which is not necessarily mathematical. It's more about small print. But there are some deals out there where you buy one get one free, and it's actually a monthly payment scheme, or things like that. So you have to got to be careful that deals are what they seem and there isn't any sort of strings attached. So that's just something that that brought to mind when I heard that shoe offer.

INTERVIEWER: Lovely. Now price comparison websites strike me as a way that you'll often get this sort of information, and as you say, you can pick at things that are there to sort of fit your needs. So if

they are not relevant to you, they may not be the best deal. So this is quite a common sort of technique people might use.

Can we just end with one final example that I know you wanted to talk about, which is loans. Which we've been talking about money and finance and things, so it's a very topical issue, but we only have a minute or so left. So could you briefly run us through how one might approach a loan type thing?

CHARLOTTE WEBB: Yeah it's more of just a bit of an overview, thinking-- on the way here, I saw a poster for kind of an affordable loan, and it just got me thinking about how posters and adverts and everything kind of influence us. So this affordable loan that was being advertised was 400 pounds, and it said pay back weekly 10 pounds 19 pence for 52 weeks. And actually, that does sound very affordable, 10 pounds a week. But a quick calculation, if you times 10 pounds 19 times 52, then that gives you 529 pounds 88.

INTERVIEWER: Right.

CHARLOTTE WEBB: Which means that you're actually paying 129 pounds 88 interest on 400 pounds, which is 32.5%. And if you look at a standard loan from a bank, I had a quick look on the train, majority of banks are around 3%. So you're paying 30% for a loan which you could get for 3%. And 400 pounds on a 3% loan for a year would be 12 pounds interest, compared to that 129.

And even more shocking is the payday loans, which, they do have small print which tell you that they are for short term basis only, so one month, two months, et cetera. But I had a quick look at one which allows you to borrow 400 pounds. The minimum time you can pay back is three months. So you have to at least be charged interest for three months. And that was going to charge you 172 pounds 39, and that's the absolute minimum interest you can pay on that loan. And that was actually 43%.

Now if you carried on for six months, they would charge you 365 pounds 96, which is 91% interest. And if you went against the advice in the terms and conditions and actually had it for a year, then the kind of APR interest sinks in, which was 1,575% interest. Now if you're OK with percentages and you see that number, it would ring alarm bells. If you're not confident with percentages, you might not realise that, actually, that's paying 6,300 pounds interest, plus the 400 pounds that you borrowed.

INTERVIEWER: So it's important to look at how much you're going to be paying, because as you said at the

beginning, once you think, well, that seems affordable, you can sort of be lulled into that false sense. OK, [INAUDIBLE] Charlotte Webb, thank you so much for coming along and giving us your top tips and again, explaining some of these principles that students will become very familiar with if they're studying mathematics.

Our next session is with Meg [? Dunbarker. ?] We'll be talking about caring for yourself during your study. So hang on in the chat. This is going to be a really lovely session where we're going to be sharing tips and ideas about what works for you and how to look after yourself emotionally, physically, and spiritually during your studies. But before that, we're going to have a quick break. Grab a cup of coffee while we show you one of the Open University's advertisements, which is about Dream, Believe, Succeed, so we'll get back in about five minutes for that next session. See you soon.

[MUSIC PLAYING]