

6th Grade Mathematics Inquiry

What's the best way to buy that Playstation?

CCSS-M Standard Connections	CCSS-M GRADE 6 EXPRESSIONS AND EQUATIONS: Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.
Staging the Question	Research the price of the latest Playstation video console system and estimate what the next version will cost. Assuming you can save up to \$35/month, how long will it take you to save up for it? If the system were bought with a parent's credit card, predict/guess what the system will cost given that the minimum payment you have to make each month is \$35.

Supporting Question 1	Supporting Question 2	Supporting Question 3	
Understand	Understand	Assess	
What would be the credit account balance after one month?	How could the credit model become more sophisticated?	How do factors such as interest rate, or payment amount affect the time to balance zero?	
Formative Performance Task 1	Formative Performance Task 2	Formative Performance Task 3	Formative Performance Task 4
Break the problem into steps and show calculations for figuring out the account balance for the credit card after the first month.	Translate the original calculations to a spreadsheet where each column represents a step in the calculation. Use the drag/copy feature to repeat the process for additional months to determine how long it would take to pay off the Playstation.	Modify the model to allow payments to happen on a different day of the month or with a different interest rate. Include a graphical representation of months versus balance.	Replace hard coded values with values linked to a separate cell to test different scenarios by changing that value.
Featured Sources	Featured Sources	Featured Sources	Featured Sources
Source A: How Is Credit Card Interest Calculated? Article	Source A: How Is Credit Card Interest Calculated? Article	Source A: How Is Credit Card Interest Calculated? Article	Source A: How Is Credit Card Interest Calculated? Article

Summative Performance	ARGUMENT What's the best way to buy that Playstation? Construct and present an argument (e.g., infographic, essay) that addresses the compelling question using specific claims supported with data
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Task	scenarios from the spreadsheet model.
	EXTENSION/ACT Develop a “credit-wise” proposal for purchasing the Playstation.

Summative Performance Task

At this point in the inquiry, students should be expected to demonstrate the breadth of their understandings and abilities to use evidence from multiple sources and models to support their distinct claims. In this task, students construct an evidence-based argument responding to the compelling question “What’s the best way to buy that Playstation?” It is important to note that students’ arguments could take a variety of forms, including an outline, infographic, or essay.

Students’ arguments likely will vary, but could include any of the following

- The best way to buy the playstation would be to save up for it. Otherwise you are paying over \$250 extra for it.
- I would have to save for two years in order to buy the paystation. The extra \$250 is worth being able to get it right away.

Below is an example of what a students’s spreadsheet model might look like. The columns are the balance at the start of the billing cycle, the daily interest rate, monthly/billing cycle interest, average daily balance, remaining balance (initial balance – payment + interest), and the total amount paid to date.

