

MeTEOR Performance Task

Sixth Grade

Mathematics

Sophie's Choice



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CONNECTING THE DOTS

Performance Task Item: Sophie's Choice

Task/Question 1:

- A.** What is the vocabulary term for the 3 in 4^3 ?

- B.** Evaluate $4 \cdot 3$:

Task/Question 2:

- A.** Write an expanded version of 4^3 , and evaluate:

- B.** Explain why the product of 4^3 is different than the product of $4 \cdot 3$. Be sure to specify the procedural differences.

Task/Question 3:

Sophie's Choice

While interviewing for a job, Sophie is posed this question, "Which of the following options would be the preferred salary?"

Option One: \$5,000 monthly

Option Two: Two cents on the first day, with the pay doubling each day up until the 28th day of the month.



Because the job description included quick decision-making skills, Sophie knew she had to make the best choice with only a few seconds of thought in order to be considered for the job.

- A. Which option do you think Sophie would have quickly chosen? Explain your thinking.

- B. Mentally calculate how much money Sophie would make annually if she chose Option One.

- C. Write an **expanded expression** for the amount of money she would have been paid on day three, if she had chosen Option Two.

- D. Write an **exponential expression** for the amount of money she would have been paid on day three, if she had chosen Option Two.

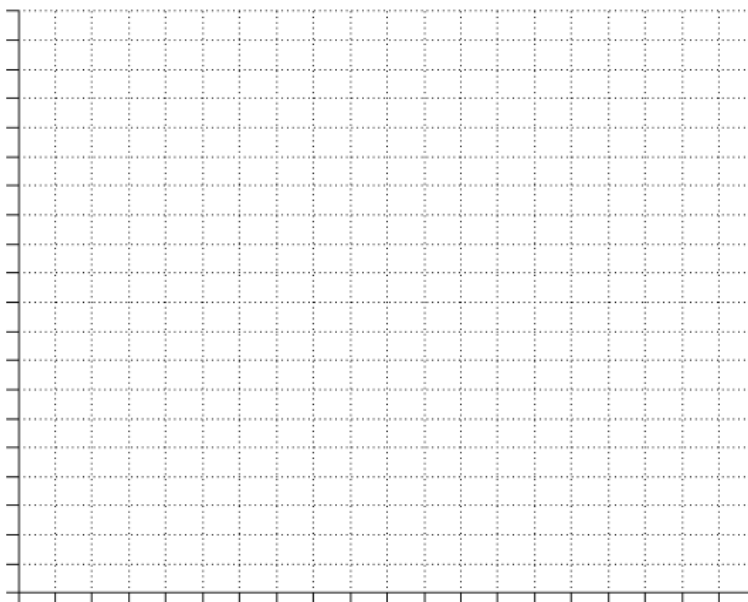
Task/Question 4:

Use Option Two in **Sophie's Choice** to complete the following:

- A.** Make a table, similar to the one below, to show how the number of cents grew by **day 10**. Include days, cents, and exponential expression.

Day	Amount of Cent	Exponential Expression
1	2	2^1
2	4	2^2

- B.** Using your exponential expression, graph how fast the two pay options increase each day. Label your axes. Write in Pencil, because you may have to adjust your intervals.



- C.** How did you choose the intervals for your graph? Explain how the understanding of exponents influenced your choice.

Task/Question 5:

A. Based on a pattern, how much money do you **estimate** would have been paid on the 28th day if Sophie had chosen Option 2? Defend your mathematics.

B. Based on what option you stated that Sophie would have chosen in task/question 3, do you believe she chose correctly? Do you believe she would have gotten the job? Defend your thinking.

Task/Question 6:

- A.** Design a task or question that an employer could use to test both mathematical understandings and quick decision making skills.
- B.** What is the specific solution that the employer would be looking for in your task? How could it be used to demonstrate the characteristics that the employer would be looking for?



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