

M113 - Modeling with Probability

Badge Specific Essential Concepts

- ❖ Two events are independent if the occurrence of one event does not affect the probability of the other event. Determining whether two events are independent can be used for finding and understanding probabilities. [NCTM Essential Concept EC.SP.P.1]
- ❖ Conditional probabilities—that is, those probabilities that are “conditioned” by some known information—can be computed from data organized in contingency tables. Conditions or assumptions may affect the computation of a probability. [NCTM Essential Concept [EC.SP.P.2]

Administration Notes

This Pre-Post Task is to be used as a tool for students to understand their learning. When administering this task, it is important to highlight a few things for students:

- Students will have the opportunity to complete the task at the beginning and the end of this badge. This is because we want students to be able to see how much they've learned and reflect on that learning in ways that matter to them.
- The work on the task will not be graded. The task is not a quiz or a test - it is designed to support students in understanding how much they have learned from the beginning of the badge to the end.
- Students can have access to any technology that they typically use during classroom instruction to complete this task.
- Students should work individually on the task.

Please share these things with students, reinforcing the idea that this task has been designed to support them in reflecting on the mathematics they have learned. In some tasks, students may create work in different places. It is helpful for them to have their own online folders to store their pre-post tasks as well as any supporting artifacts, such as screenshots from online tools that they use.

Task Analysis

The purpose of the task analysis section is to report on student performance at two points in time -- before and after badge instruction. Complete a table for each student based on an analysis of their responses. You can create summary data for yourself if you choose to understand more globally how students are doing on the concepts measured by the task.

PRE

Were there any interesting or instructionally useful responses or insights from students? Please record those here:

Question/Look For	Blank or similar	Emerging	Approaching	Meeting	Other Notes
(1) Student is able to provide an explanation for which age group they believe will be the most interested in the company's product.					
(2) Student is able to identify teens as being the most interested in the company's product using a mathematical justification.					
(3) Student is able to identify that the two variables from the two-way table are dependent using the survey data.					
(4) Student is able to correctly calculate the two probabilities and provide a reasonable suggestion for the company based on these values.					
(5) Student is able to correctly calculate the percentage and provide a reasonable suggestion for the company based on this value.					

POST

Were there any interesting or instructionally useful responses or insights from students? Please record those here:

Question/Look For	Blank or similar	Emerging	Approaching	Meeting	Other Notes
(1) Student is able to provide an explanation for which age group they believe will be the most interested in the company's product.					
(2) Student is able to identify teens as being the most interested in the company's product using a mathematical justification.					
(3) Student is able to identify that the two variables from the two-way table are dependent using the survey data.					
(4) Student is able to correctly calculate the two probabilities and provide a reasonable suggestion for the company based on these values.					
(5) Student is able to correctly calculate the percentage and provide a reasonable suggestion for the company based on this value.					