



## Bayonne Public Schools

667 Avenue A.  
Bayonne, New Jersey 07002

Dawn Aiello  
Director of Mathematics

(201) 858-5920  
[daiello@bboed.org](mailto:daiello@bboed.org)

Dear Parents/Guardians of students entering Probability & Statistics,

This summer, your child will have the opportunity to prevent summer learning loss to be better prepared for success in Probability & Statistics. He or she will also have the opportunity to earn up to ten extra credit points on the first mathematics test of the 2023-2024 school year.

Note: The assignment is attached to this letter. In order to receive credit, students must show ALL written work and turn it in to their teacher by September 25, 2023.

Also, please do not wait until the end of summer to begin these skills.

A handwritten signature in black ink, appearing to read "Dawn Aiello".

Dawn Aiello  
Director of Mathematics

## Task 1: Normal Probability Distribution

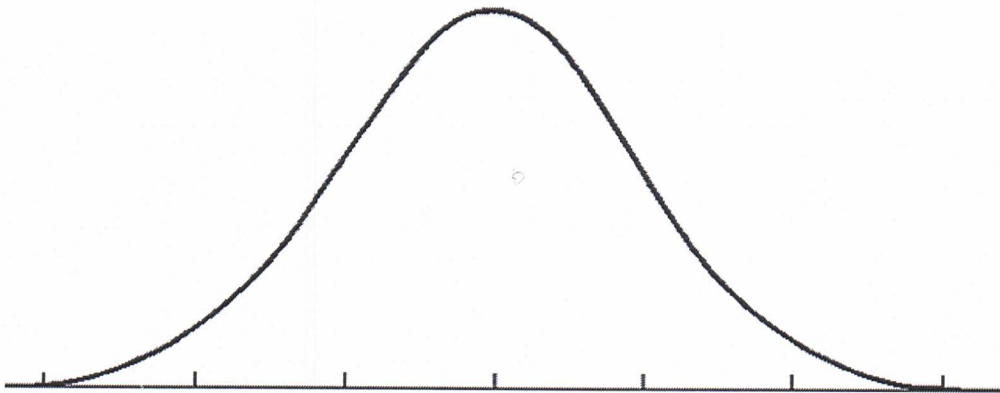
**Video Support:** <https://www.youtube.com/watch?v=gl5y3RZe9fk>

Task 1:

IQ tests were given to seniors in Bayonne High School. The results were normally distributed. Within the bell curve, 68% of the students had IQ scores between 85 and 115. The standard deviation was 15.

PART A -Use this information to estimate the mean IQ score of the seniors in BHS.

PART B -Label the normal curve centered at the mean, along with probabilities 68% and 95% for the IQ scores of the seniors using the provided information.



PART C - Using the sketch of the normal curve in PART B, shade the appropriate area under the normal curve that would represent an IQ of 115 or greater.

## Task 2: Experimental Probability

### Support:

The formula for the experimental probability is defined by:

$$P(E) = \text{Number of times an event occurs} / \text{Total number of trials}$$

What is the probability that when flipping a coin it will land on heads?

Flip a coin 25 times. Put a tally mark in each column for the outcome you get. We know the theoretical probability is 50% or 1 out of 2. Find your experimental probability. How does it compare?

	Tally Marks	Percentage
Heads		
Tails		

## Task 3: Probability With and Without Replacement

### Online support:

<https://www.onlinemathlearning.com/probability-without-replacement.html>

A bag of marbles contains 3 blue, 4 red, and 6 yellow marble.

Find the probability of drawing:

a. One red marble

b. One yellow marble

Suppose you draw TWO marbles without replacement, find the probability of drawing:

c. two blue marbles

d. one blue and then one yellow

e. one yellow, then one red, and then one red