

**DIOCESE OF DES MOINES
MATHEMATICS
Dowling Catholic High School
Expectations
Grades 9-10-11-12**

PROBABILITY / STATISTICS

STANDARD 1: The student will understand and apply properties of number sense and process of computation.

The student will/can....

Benchmark

9-12.Math.S1.B1: Demonstrate the concepts of ratio using both direct and indirect proportion.
Apply the concepts of ratio and proportions.

Benchmark

9-12.Math.S1.B2: Demonstrate understanding of operations and computations with real numbers.
Demonstrate understanding of operations and computations with real numbers.

Benchmark

9-12.Math.S1.B3: Use estimation to predict computation results and to determine the reasonableness of answers involving real numbers.
Use estimation to predict computation results and to determine the reasonableness of answers involving simple operations using real numbers.

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STANDARD 2: The student will understand and apply the concepts and procedures of mathematics.

The student will/can....

Benchmark

9-12.Math.S2.B1: Measure linear dimensions of 2- and 3-dimensional objects to determine perimeters, areas, surface areas and volumes.
NA (for this course)

Benchmark

9-12.Math.S2.B2: Describe, compare, and classify 2- and 3-dimensional figures using geometric properties.
NA (for this course)

Benchmark

9-12.Math.S2.B3: Use 2-dimensional coordinate grids including distance between two points and slope.
NA (for this course)

Benchmark

9-12.Math.S2.B4: Identify properties and relationships of plane geometry.
NA (for this course)

Benchmark

9-12.Math.S2.B5: Use properties of symmetry, similarity and congruence.
NA (for this course)

Benchmark

9-12.Math.S2.B6 Determine probabilities for simple events.
Determine probabilities for simple events.

Benchmark

9-12.Math.S2.B7: **Collect, organize, and display data using appropriate methods, forms and technology.**
Predict and draw conclusions from data collected and present a valid argument to support predictions.

Benchmark

9-12.Math.S2.B8: **Generalize arithmetic patterns, sequences and series.**
NA (for this course)

Benchmark

9-12.Math.S2.B9: **Use variables to create and solve equations and inequalities.**
NA (for this course)

Benchmark

9-12.Math.S2.B10: **Evaluate and simplify algebraic expressions, using order of operations.**
NA (for this course)

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STANDARD 3: The student will use a variety of strategies in the problem-solving process.

The student will/can....

Benchmark

9-12.Math.S3.B1: Be able to define problems in new situations.
Identify and define problems in complex situations.

Benchmark

9-12.Math.S3.B2: Organize and select relevant information in the problem-solving process.
Organize and select relevant information in the problem-solving process.

Benchmark

9-12.Math.S3.B3: Apply appropriate operations, tools, and approaches to problem situations.
Apply appropriate methods to complex problems.

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STANDARD 4: The student will use mathematical reasoning.

The student will/can....

Benchmark

**9-12.Math.S4.B1: Validate thinking and mathematical ideas using models and counter examples.
NA (for this course)**

Benchmark

**9-12.Math.S4.B2: Make conjectures and inferences based on analysis of new problem situations.
NA (for this course)**

Benchmark

**9-12.Math.S4.B3: Apply deductive and/or inductive reasoning to mathematical problems and draw conclusions.
Justify and verify results using the deductive reasoning process.**

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STANDARD 5: The student will understand how the various branches of mathematics connect to each other, to other subjects and to real-life situations.

The student will/can....

Benchmark

9-12.Math.S5.B1: Relate and use different mathematical models and representations for the same situation.
Relate and use different mathematical models and representations for the same situation.

Benchmark

9-12.Math.S5.B2: Use mathematical thinking and modeling in other disciplines.
Use mathematical thinking and modeling in other disciplines.

Benchmark

9-12.Math.S5.B3: Investigate the extensive use of mathematics outside the classroom.

Developmental Levels

<i>Expert</i>	Identify situations where mathematics can be used to solve problems in realistic local, national and global settings.
<i>Practitioner</i>	Investigate the extensive use of mathematics outside the classroom.
<i>Apprentice</i>	Identify how mathematics is used in careers.
<i>Novice</i>	Give examples of how mathematics is used in the home.

Benchmark

9-12.Math.S5.B4: Communicate knowledge and understanding of math using both everyday and mathematical language.
Communicate knowledge and understanding of math using both everyday and mathematical language.