



2029 Probability and Statistics - Recommended for Grades 9 – 12

Instructional Material Bureau
Summer 2012 Adoption Review Institute
Form F: Publisher Alignment Form & Review Scoring Rubric

Publisher information and instructions:

Corporation or Publisher: Pearson Education, Inc.	Submitted by (name) : Hope Heredia	
Division or Imprint: Prentice Hall Phone: 201-236-5445	E-mail: hope.heredia@pearson.com	
Title of Student Edition: Elementary Statistics: Picturing the World	ISBN: 9780132116527	Lexile Score: NotApplicable
Title of Teacher Edition: Elementary Statistics: Picturing the World, Annotated Instructor's Edition	ISBN: 9780321693655	

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SECTION I (CONTENT STANDARDS) CITATION REQUIREMENTS AND SCORING

Enter three (3) citations (one in each cell) for each indicator; enter the page number and the paragraph. (Example: [123-5] would refer the reviewer to Page 123, paragraph 5 to find the evidence of the indicator.)

Citations for "Content Standards, Benchmarks & Performance Standards" must refer to the Student Edition.

Citations for "Other Relevant Criteria" must refer to the Student Edition or the Teacher Edition.

Each citation must address an increasing level of cognition:

- Citation 1: Cites material that provides **an introduction** to the content at the **basic knowledge and recall** level.
- Citation 2: Cites material that builds on prior knowledge/skills at the **comprehension and application** level.
- Citation 3: Cites material that builds on prior knowledge/skills and integrates content to meet the standard at the **analysis, synthesis, or evaluation** levels.

At least two citations must be found satisfactory by the Review Team to meet the requirements of the standard. Scoring will be as follows:

- Satisfactory citations at the "Basic Knowledge" level only, or no valid citations, score **zero (0) points**.
- Satisfactory citations at both the "Basic Knowledge" and "Application" level score a total of **six (6) points**.
- Satisfactory citations at all three levels score a total of **ten (10) points**.

SEE THE BEGINNING OF SECTION II FOR REQUIREMENTS AND SCORING OF "OTHER RELEVANT CRITERIA" CITATIONS

THE PAGES OF THIS FORM WILL BE SCANNED. PLEASE FOLLOW THESE GUIDELINES WHEN PREPARING IT FOR SUBMISSION:

- Use only the original forms provided by the Instructional Material Bureau. Do not modify the form. Do not attempt to "recreate" the form.
- Print out the completed form on 20# white 8.5 x 11 office paper ONLY. Do not insert covers, dividers, etc.
- Do not bind the completed form. Use a single staple in the corner to secure the form.



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FINAL SCORE VERIFICATION (TO BE COMPLETED BY THE FACILITATOR)		
	Verified: 90% or Higher	Facilitator Signature
	Verified: 89% or Lower	Facilitator Signature

Reviewer Name:	Reviewer Number:	Date:	Facilitator:
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REVIEWER INSTRUCTIONS

<p>For each citation you verify, make a note in the citation cell (Use 4 if the citation was verified or 8 if the citation did not provide evidence). Based on the citations you verified, enter the score in the “Item Score” cell at the end of the row. Every item with an item number in the Item # column must be scored.</p> <p>Citations that you verify at the “Basic Knowledge” level only, or no valid citations, score zero (0) points. Citations that you verify at both the “Basic Knowledge” and “Application” level score a total of six (6) points. Citations that you verify at all three levels score a total of ten (10) points.</p> <p>At the end of each page, total the scores in the “Item Score” column. Enter the total score in the Page Total Score box at the bottom of each page. At the end of the section, add up all your Page Total Score boxes and enter that total in the Reviewers Section I Total Section Score box</p> <p>POINTS DEFINITION</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">0</td> <td>Citations did not meet the requirements of the standard for at least two levels.</td> </tr> <tr> <td>6</td> <td>Citations met the requirements of the standard at two of the levels.</td> </tr> <tr> <td>10</td> <td>Citations met the requirements of the standard at all three levels.</td> </tr> </table>	0	Citations did not meet the requirements of the standard for at least two levels.	6	Citations met the requirements of the standard at two of the levels.	10	Citations met the requirements of the standard at all three levels.
0	Citations did not meet the requirements of the standard for at least two levels.					
6	Citations met the requirements of the standard at two of the levels.					
10	Citations met the requirements of the standard at all three levels.					

CONTENT STANDARDS, BENCHMARKS & PERFORMANCE STANDARDS	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
Interpreting Categorical & Quantitative Data S-ID					
Summarize, represent, and interpret data on a single count or measurement variable					
1. Represent data with plots on the real number line (dot plots, histograms, and box plots).	42-1	42-3	52-2	1	
2. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.	65-2	78-1	87-2	2	
3. Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).	68-1	68-2	78-1	3	
4. Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.	86-1	86-2	246-2	4	
Summarize, represent, and interpret data on two Categorical and quantitative variables					
5. Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.	551-1	557-1	554-2	5	
6. Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.	58-1	58-2	487-1	6	
6. (a) Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use	501-1	504-1	509-3	7	

CONTENT STANDARDS, BENCHMARKS & PERFORMANCE STANDARDS	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models					
6. (b) Informally assess the fit of a function by plotting and analyzing residuals.	501-2	N/A	513-2	8	
6. (c) Fit a linear function for a scatter plot that suggests a linear association.	502-1	505-1	504-1	9	
Interpret linear models					
7. Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data	502-2	504-2	508-1	10	
8. Compute (using technology) and interpret the correlation coefficient of a linear fit.	487-1	496-2	490-1	11	
9. Distinguish between correlation and causation.	484-2	495-1	514-1	12	
Making Inferences & Justifying Conclusions S-IC					
Understand and evaluate random processes underlying statistical experiments					
1. Understand statistics as a process for making inferences about population parameters based on a random sample from that population.	3-1	3-2	8-1	13	
2. Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. <i>For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?</i>	17-1	187-1	144-1	14	
Making inferences and justify conclusions from sample surveys, experiments, and observational studies					
3. Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.	16-3	17-2	25-3	15	

CONTENT STANDARDS, BENCHMARKS & PERFORMANCE STANDARDS	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
4. Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.	306-1	306-2	310-1	16	
5. Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.	430-1	432-1	439-2	17	
6. Evaluate reports based on data.	16-2	27-1	113-1	18	
Conditional Probability & the Rules of Probability S-CP					
Understand independence and conditional probability and use them to interpret data					
1. Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes	128-1	128-2	130-1	19	
2. Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities	146-1	146-3	151-1	20	
3. Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$	145-1	N/A	154-2	21	
4. Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. <i>For example</i>	551-1	145-2	159-1	22	
5. Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. <i>For example</i>	150-1	146-2	156-1	23	
Use the rules of probability to compute probabilities of compound events in a uniform probability model					
6. Find the conditional probability of A given B as the	145-1	145-2	146-1	24	

CONTENT STANDARDS, BENCHMARKS & PERFORMANCE STANDARDS	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
fraction of B 's outcomes that also belong to A , and interpret the answer in terms of the model.					
7. Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.	157-2	158-2	160-1	25	
8. (+) Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B A) = P(B)P(A B)$, and interpret the answer in terms of the model.	146-1	148-1	154-2	26	
9. (+) Use permutations and combinations to compute probabilities of compound events and solve problems.	168-1	172-1	178-1	27	
Using Probability to Make Decisions S-MD					
Calculate expected values and use them to solve problems					
1. (+) Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions.	190-1	192-1	195-2	28	
2. (+) Calculate the expected value of a random variable; interpret it as the mean of the probability distribution.	194-1	196-2	201-3	29	
3. (+) Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. <i>For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.</i>	192-1	192-2	215-2	30	
4. (+) Develop a probability distribution for a random variable defined for a sample space in which	193-1	199-1	201-2	31	

CONTENT STANDARDS, BENCHMARKS & PERFORMANCE STANDARDS	Citation 1 Basic Knowledge	Citation 2 Application	Citation 3 Analysis	Item #	Item Score
probabilities are assigned empirically; find the expected value. <i>For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?</i>					
Use probability to evaluate outcomes of decisions					
5. (+) Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.	194-1	196-2	201-2	32	
5. (a) Find the expected payoff for a game of chance. <i>For example, find the expected winnings from a state lottery ticket or a game at a fast-food restaurant.</i>	194-1	196-2	201-2	33	
5. (b) Evaluate and compare strategies on the basis of expected values. <i>For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident.</i>	194-1	196-2	201-2	34	
6. (+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).	196-1	199-2	215-2	35	
7. (+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).	197-1	200-2	201-3	36	

Reviewer's Section I Totals	Total Section Score
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pg. 7 Total	
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REVIEWER # _____

PUBLISHER: SECTION II CITATION REQUIREMENTS AND SCORING

Citations for "Other Relevant Criteria" will usually refer to the Teacher Edition, but may refer to the Student Edition. Enter three (3) citations (one in each cell) for each indicator; enter the page number and the paragraph.

- Example: [123-5] would refer the reviewer to Page 123, paragraph 5 to find the evidence of the indicator.

All three citations must be found satisfactory by the Review Team to meet the requirements of the standard.

REVIEWER: USE THE TEACHER'S EDITION AND THE STUDENT EDITION TO CONDUCT THIS PORTION OF THE REVIEW

Every item with an item number in the **Item #** column must be scored.

- All three citations must be verified in order to receive points.

1. For each citation you verify, make a note in the citation cell (Use 4 if the citation was verified or 8 if the citation did not provide evidence).
2. Based on the citations you verified, enter the score in the "Item Score" cell at the end of the row.
3. At the end of each page, total the scores in the "Item Score" column.
4. Enter the total score in the **Page Total Score** box at the bottom of each page.
5. At the end of the section, add up all your **Page Total Score** boxes and enter that total in the Reviewers Section II **Total Section Score box**

KEY:
 0 = Citations did not meet the requirements of the standard.
 5 = Citations met the requirements of the standard.

SECTION II: OTHER RELEVANT CRITERIA	Citation 1	Citation 2	Citation 3	Item Number	Item Score
GENERAL CRITERIA					
A. The textbook provides pictorials, graphics, and illustrations that represent diversity of cultures, race, color, creed, national origin, age, gender, language or disability.	204-1	206-1	211-1	1	

pg. 8 Total	
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SECTION II: OTHER RELEVANT CRITERIA	Citation 1	Citation 2	Citation 3	Item Number	Item Score
B. The textbook provides a variety of cultural perspectives used within the lesson content to account for various cultural/background experiences.	73-1	214-1	473-1	2	
C. The textbook provides assignments with activities requiring student responses that promote respect for all people regardless of race, color, creed, national origin, age, gender, language or disability.	200-1	296-1	472-1	3	
D. The textbook presents appropriate role models within content rather than an oversimplified standardized image of a person or group; avoids stereotyping.	169	302	399	4	
E. At the beginning of each unit, chapter or lesson there is a list of content and mathematical practice standards covered within the unit, chapter and/or lesson.	128-1	168-1	190-1	5	
F. The textbook provides an introduction to the lesson including the comprehension questions (i.e. focus questions or guiding questions) the student will be expected to answer at the conclusion of the classroom instruction.	189-190	318	513	6	
G. The textbook integrates appropriate mathematical vocabulary into each lesson.	65-2	156-1	202-1	7	
H. The textbook provides visual representations such as pictorial models, tables, graphs, manipulatives and number lines to assist students' comprehension.	85-1	128-2	195-2	8	
I. The textbook provides extensive and varied opportunities to practice lesson objectives using higher order thinking skills.	143-3	224-1	325-3	9	

pg. 9 Total	
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SECTION II: OTHER RELEVANT CRITERIA	Citation 1	Citation 2	Citation 3	Item Number	Item Score
J. The textbook provides the student with ongoing review and practice for the purpose of retaining previously acquired knowledge.	43-1	83-2	261-2	10	
K. The textbook provides activities for students to make interdisciplinary connections to social studies, science, language arts, music, art and sports plus connections with their personal experiences.	130-3	228-1	312-3	11	
L. The textbook provides field activities for students.	120-1	186-1	232-1	12	
M. The textbook incorporates increasingly complex tasks within lessons requiring analysis, evaluation and synthesis.	143-3	224-1	325-3	13	
N. The textbook provides cognitively demanding activities that elicit critical thinking and reasoning.	32-1	52-2	120-1	14	
O. The textbook incorporates the use of appropriate technology and manipulatives by students.	63-2	206-1	216-1	15	
P. The textbook provides references to support student learning such as a glossary and word lists.	65-2	156-1	202-1	16	
Q. The Teacher's Edition presents learning progressions to provide an overview of the scope and sequence of skills and concepts.	32-1	52-2	224-1	17	
R. Within each lesson of the Teacher's Edition, there are clear measurable learning objectives and opportunities for differentiated instruction.	128-1	168-1	190-1	18	
S. The Teacher's Edition provides tiered activities for differentiated instructional to meet the needs	107-1	107-3	108-2	19	

pg. 10 Total	
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SECTION II: OTHER RELEVANT CRITERIA	Citation 1	Citation 2	Citation 3	Item Number	Item Score
of all students including below proficiency and advanced learners.					
T. The Teacher’s Edition provides instructional strategies, resources, and language development support for English language learners (sheltered instruction).	N/A	N/A	N/A	20	
U. The Teacher’s Edition includes content and information that support a variety of approaches to instruction, including (score each item separately):					
1. Writing activities where students explain their mathematical thinking.	143-2	179-2	248-2	21	
2. Project-based learning assignments	120-1	186-1	232-1	22	
3. Interdisciplinary instruction	130-3	228-1	312-3	23	
4. Cooperative learning strategies	120-1	186-1	232-1	24	
5. Early and effective intervention instructional strategies	N/A	N/A	N/A	25	
V. The Teacher’s Edition provides the teacher with instructional strategies for every lesson.	N/A	N/A	N/A	26	
W. The Teacher’s Edition and resources provide instructional support for developing both student conceptual understanding and procedural fluency.	82-1	83-1	103-2	27	
X. The Teacher’s Edition and resources provide various assessments (e.g., pre- and post-tests, self-assessments, written reflections, mid-unit	43-1	83-2	261-2	28	

pg. 11 Total	
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SECTION II: OTHER RELEVANT CRITERIA	Citation 1	Citation 2	Citation 3	Item Number	Item Score
quizzes, quick checks for understanding of the key concepts, etc.) that address lesson and/or chapter objectives.					
Y. The Teacher's Edition and resources provide student assessments that are accompanied by student work exemplars and score identification of concepts and skills to support further instruction, differentiation, remediation or acceleration.	43-1	83-2	261-2	29	
Z. The Teacher's Edition provides opportunities for student presentations and projects using technology.	120-1	186-1	216-1	30	
STANDARDS FOR MATHEMATICAL PRACTICE					
AA. Make sense of problems and persevere in solving them:					
1. The lesson activities and assessments require students to make conjectures about the form and meaning of their solution strategies and plan a solution strategy rather than jumping into solution attempts.	32-1	52-2	120-1	31	
2. The lesson activities require students to communicate their understanding of the approaches of others in solving problems and to identify correspondences between different approaches.	143-2	179-2	248-2	32	
BB. Reason abstractly and quantitatively:					

pg. 12 Total	
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SECTION II: OTHER RELEVANT CRITERIA	Citation 1	Citation 2	Citation 3	Item Number	Item Score
1. The lesson activities and assessments require students to make sense of quantities and their relationships in problem situations.	178-1	217-1	467-2	33	
2. The lesson activities and assessments require students to decontextualize mathematical problem situations by abstracting the situation, representing it symbolically, and manipulating the representing symbols to solve problems.	82-1	83-1	103-2	34	
3. The lesson activities and assessments require students to pause during manipulation of numbers and symbols to contextualize mathematical expressions and equations, create coherent representations, consider the units involved, and attend to the meaning of quantities within a context.	178-1	217-1	467-2	35	
CC. Construct viable arguments and critique the reasoning of others:					
1. The lesson activities and assessments require students to understand and use stated assumptions, definitions, and previously established results in constructing mathematical arguments.	143-2	179-2	248-2	36	
2. The lesson activities and assessments require students to provide a justification for their solutions, communicate their mathematical reasoning to others and respond to arguments of others.	32-1	52-2	120-1	37	
3. The lesson activities and assessments require students to compare the effectiveness of two plausible arguments; distinguish correct	32-1	52-2	120-1	38	

pg. 13 Total	
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SECTION II: OTHER RELEVANT CRITERIA	Citation 1	Citation 2	Citation 3	Item Number	Item Score
logic or reasoning from that which is flawed, and if there is a flaw in an argument, explain what it is.					
4. The lesson activities and assessments provide opportunities for students to explore examples and counter examples.	143-2	179-2	248-2	39	
DD. Model with mathematics:					
1. The lesson activities and assessments require students to apply the mathematics they know to solve problems arising in everyday life, society and the workplace.	130-3	228-1	312-3	40	
2. The lesson activities and assessments require students to apply what they know to breakdown and simplify complicated situations.	143-2	179-2	248-2	41	
3. The lesson activities and assessments require students to interpret their mathematical results in the context of the situation, reflect on whether the results make sense, and reflect on how well their model has supported their problem solving.	178-1	217-1	467-2	42	
EE. Use appropriate tools strategically:					
1. The lesson activities and assessments require students to use a variety of tools and manipulatives to solve various problems.	63-2	206-1	216-1	43	
2. The lesson activities and assessments require students to make sound decisions about choosing appropriate tools.	63-2	206-1	216-1	44	

pg. 14 Total	
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SECTION II: OTHER RELEVANT CRITERIA	Citation 1	Citation 2	Citation 3	Item Number	Item Score
3. The lesson activities and assessments require students to use estimation to detect possible errors.	23-4	291-2	413-3	45	
4. The lesson activities and assessments require students to use technology to explore and deepen their understanding of concepts.	63-2	206-1	216-1	46	
FF. Attend to precision:					
1. The lesson activities and assessments require precise communication among students (e.g., using clear definitions, stating the meaning of symbols, specifying units of measure.)	143-2	179-2	248-2	47	
2. The lesson activities and assessments require students to answer with a degree of precision appropriate for the problem's context.	178-1	217-1	467-2	48	
GG. Look for and make use of structure:					
1. The lesson activities and assessments require students to look closely to discern a pattern or structure through opportunities provided.	82-1	83-1	103-2	49	
HH. Look for and express regularity in repeated reasoning:					
1. The lesson activities and assessments require students to notice if calculations are repeated, and look both for general methods and for shortcuts.	82-1	83-1	103-2	50	

pg. 15 Total	
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REVIEWER # _____

SECTION II: OTHER RELEVANT CRITERIA	Citation 1	Citation 2	Citation 3	Item Number	Item Score
2. The lesson activities and assessments require students to maintain oversight of the process, while attending to the details.	178-1	217-1	467-2	51	
3. The lesson activities and assessments require students to continually evaluate the reasonableness of their intermediate results.	23-4	291-2	413-3	52	
II. The Teacher's Edition provides scaffolded curriculum maps.	N/A	N/A	N/A	53	
JJ. Provides students with opportunities to:					
1. Demonstrate keyboarding proficiency in technique and posture while building speed.	N/A	N/A	N/A	54	
2. Refine their selection and use of appropriate search strategies.	63-2	206-1	216-1	55	
3. Expand their use of word processing, graphics, databases, spreadsheets, simulations, multimedia, and telecommunications.	63-2	206-1	216-1	56	
4. Become fluent in using multiple software applications and applying them across the curriculum.	63-2	206-1	216-1	57	
Reviewer's Section II Total					Total Section Score

pg. 16 Total	
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SECTION II: OTHER RELEVANT CRITERIA	Citation 1	Citation 2	Citation 3	Item Number	Item Score
Reviewer's Grand Total					Total Review Score

pg. 17 Total	
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