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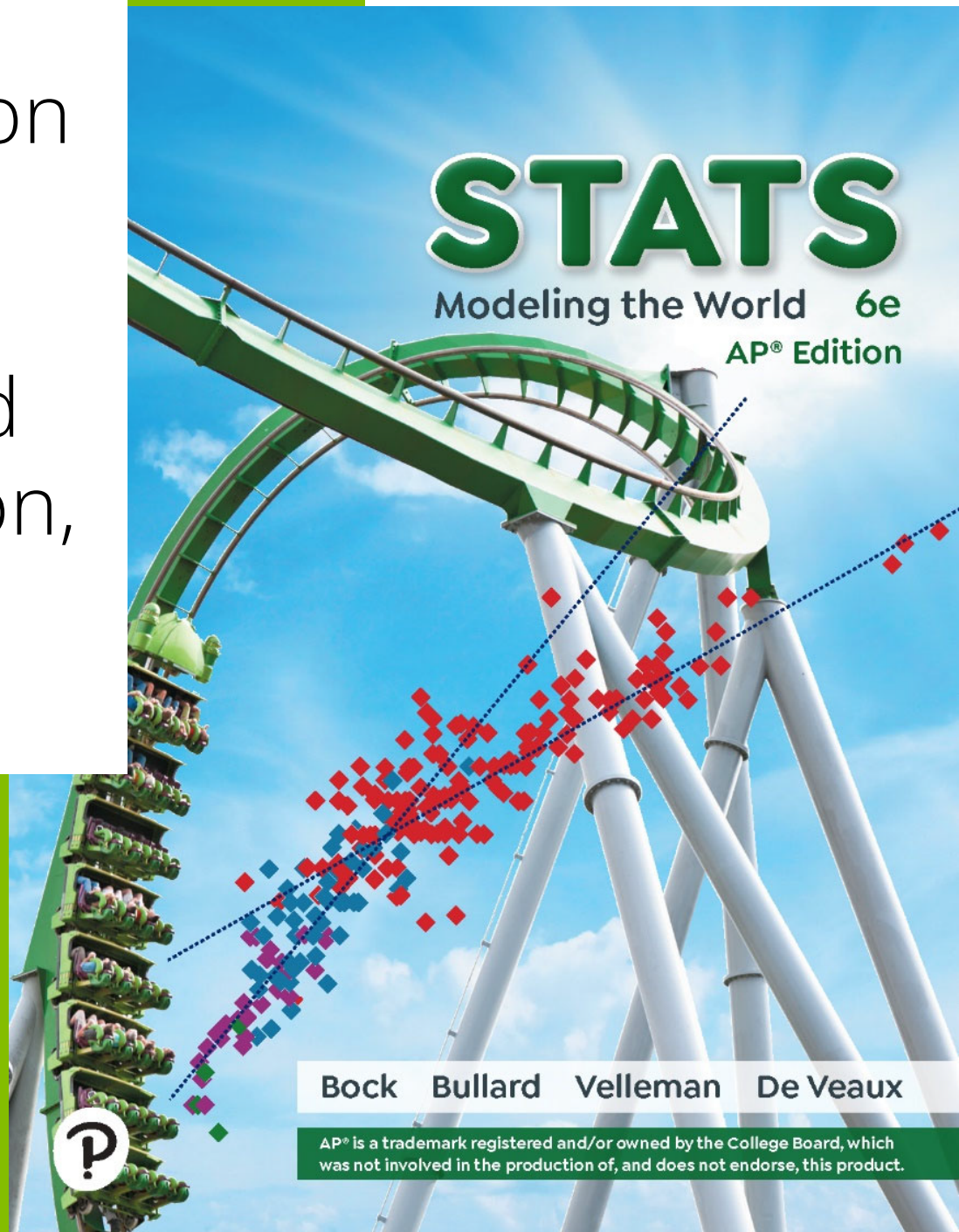
**to the Advanced Placement Statistics Standards**

Pearson

## STATS
### Modeling the World 6e
### AP® Edition

Bock   Bullard   Velleman   De Veaux

**A Correlation of Stats Modeling the World, 6th Edition, ©2023**
**to the Advanced Placement Statistics Standards**

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| **Enduring Understanding** | **Topic/Learning Objective** | |
| DAT-3 Significance testing allows us to make decisions about hypotheses within a particular context. | DAT-3.E Interpret the p-value of a significance test for a population mean, including the mean difference between values in matched pairs.  [Skill 4.B] | **SE/TE:** 606-609, 655-659 |
| | DAT-3.F Justify a claim about the population based on the results of a significance test for a population mean. [Skill 4.E] | **SE/TE:** 606-609, 619 (#33-36), 620 (#41,42) |
| UNC-4 An interval of values should be used to estimate parameters, in order to account for uncertainty. | 7.6 Confidence Intervals for the Difference of Two Means | |
| | UNC-4.V Identify an appropriate confidence interval procedure for a difference of two population means. [Skill 1.D] | **SE/TE:** 626-631, 633-637 |
| | UNC-4.W Verify the conditions to calculate confidence intervals for the difference of two population means. [Skill 4.C] | **SE/TE:** 627-631, 633-637 |
| | UNC-4.X Determine the margin of error for the difference of two population means.  [Skill 3.D] | **SE/TE:** 626, 629-630, 643-644 (#7,8) |
| | UNC-4.Y Calculate an appropriate confidence interval for a difference of two population means.  [Skill 3.D] | **SE/TE:** 628-631, 644-650 |
| UNC-4 An interval of values should be used to estimate parameters, in order to account for uncertainty. | 7.7 Justifying a Claim About the Difference of Two Means Based on a Confidence Interval | |
| | UNC-4.Z Interpret a confidence interval for a difference of population means. [Skill 4.B] | **SE/TE:** 628-631, 643-644 (#8,15), 646 (#22,23) |
| | UNC-4.AA Justify a claim based on a confidence interval for a difference of population means. [Skill 4.D] | **SE/TE:** 643 (#5,6), 644 (#15) |
| | UNC-4.AB Identify the effects of sample size on the width of a confidence interval for the difference of two means. [Skill 4.A] | **SE/TE:** 662-663 |

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| **Enduring Understanding** | **Topic/Learning Objective** | |
| VAR-7 The t-distribution may be used to model variation. | 7.8 Setting Up a Test for the Difference of Two Population Means | |
| | VAR-7.F Identify an appropriate selection of a testing method for a difference of two population means. [Skill 1.E] | **SE/TE:** 632-637 |
| | VAR-7.G Identify the null and alternative hypotheses for a difference of two population means. [Skill 1.F] | **SE/TE:** 633-635, 644 (#9), 645 (#20), 648 (#33, 37), 649 (#38), 650 (#48) |
| | VAR-7.H Verify the conditions for the significance test for the difference of two population means. [Skill 4.C] | **SE/TE:** 633-637, 645 (#20), 648 (#33) |
| VAR-7 The t-distribution may be used to model variation. | 7.9 Carrying Out a Test for the Difference of Two Population Means | |
| | VAR-7.I Calculate an appropriate test statistic for a difference of two means. [Skill 3.E] | **SE/TE:** 632-640, 643-651 |
| | DAT-3 Significance testing allows us to make decisions about hypotheses within a particular context. | |
| | DAT-3.G Interpret the p-value of a significance test for a difference of population means. [Skill 4.B] | **SE/TE:** 633-637, 644 (#9), 647 (#27) |
| | DAT-3.H Justify a claim about the population based on the results of a significance test for a difference of two population means in context. [Skill 4.E] | **SE/TE:** 644-651 |
| | 7.10 Skills Focus: Selecting, Implementing, and Communicating Inference Procedures (This topic is intended to focus on the skill of selecting an appropriate inference procedure, now that students have a range of options. Students should be given opportunities to practice when and how to apply all learning objectives relating to inference involving proportions or means.) | Opportunities to address this standard can be found on the following pages **SE/TE:** 505-509, 530-534, 555-560, 577-581, 616-623, 643-651, 667-683 |
| **UNIT 8 Inference for Categorical Data: Chi-Square** | | |
| VAR-1 Given that variation may be random or not, conclusions are uncertain. | 8.1 Introducing Statistics: Are My Results Unexpected? | |
| | VAR-1.J Identify questions suggested by variation between observed and expected counts in categorical data. [Skill 1.A] | **SE/TE:** 689-691 |

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| **Enduring Understanding** | **Topic/Learning Objective** | |
| VAR-8 The chi-square distribution may be used to model variation. | 8.2 Setting Up a Chi-Square Goodness of Fit Test | |
| | VAR-8.A Describe chi-square distributions. [Skill 3.C] | **SE/TE:** 689-690, 692 |
| | VAR-8.B Identify the null and alternative hypotheses in a test for a distribution of proportions in a set of categorical data. [Skill 1.F] | **SE/TE:** 692-695, 698, 711-713 |
| | VAR-8.C Identify an appropriate testing method for a distribution of proportions in a set of categorical data. [Skill 1.E] | **SE/TE:** 693-696 |
| | VAR-8.D Calculate expected counts for the chi-square test for goodness of fit. [Skill 3.A] | **SE/TE:** 690, 693-695, 711-712 |
| | VAR-8.E Verify the conditions for making statistical inferences when testing goodness of fit for a chi-square distribution. [Skill 4.C] | **SE/TE:** 691-695, 712, 714(#28) |
| VAR-8 The chi-square distribution may be used to model variation. | 8.3 Carrying Out a Chi-Square Test for Goodness of Fit | |
| | VAR-8.F Calculate the appropriate statistic for the chi-square test for goodness of fit. [Skill 3.E] | **SE/TE:** 693-695, 697, 711 (#1-6), 712-718 |
| | VAR-8.G Determine the p-value for chi-square test for goodness of fit significance test. [Skill 3.E] | **SE/TE:** 693-695, 711(#1-6), 712, 713 (#23), 714 (#24), 715-716 (#36, 41) |
| DAT-3 Significance testing allows us to make decisions about hypotheses within a particular context. | DAT-3.I Interpret the p-value for the chi-square test for goodness of fit. [Skill 4.B] | **SE/TE:** 693-695, 711 (#1-6), 712, 713 (#23), 715-716 (#36, 37) |
| | DAT-3.J Justify a claim about the population based on the results of a chi-square test for goodness of fit. [Skill 4.E] | **SE/TE:** 693-695, 711-718 |
| VAR-8 The chi-square distribution may be used to model variation. | 8.4 Expected Counts in Two-Way Tables | |
| | VAR-8.H Calculate expected counts for two-way tables of categorical data. [Skill 3.A] | **SE/TE:** 697-701, 714 |

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| **Enduring Understanding** | **Topic/Learning Objective** | |
| VAR-8 The chi-square distribution may be used to model variation. | 8.5 Setting Up a Chi-Square Test for Homogeneity or Independence | |
| | VAR-8.I Identify the null and alternative hypotheses for a chi-square test for homogeneity or independence. [Skill 1.F] | **SE/TE:** 697-706 |
| | VAR-8.J Identify an appropriate testing method for comparing distributions in two-way tables of categorical data. [Skill 1.E] | **SE/TE:** 698, 700-703, 705-707 |
| | VAR-8.K Verify the conditions for making statistical inferences when testing a chi-square distribution for independence or homogeneity. [Skill 4.C] | **SE/TE:** 698-705 |
| VAR-8 The chi-square distribution may be used to model variation. | 8.6 Carrying Out a Chi-Square Test for Homogeneity or Independence | |
| | VAR-8.L Calculate the appropriate statistic for a chi-square test for homogeneity or independence. [Skill 3.E] | **SE/TE:** 700-701, 704-706, 714-718 |
| DAT-3 Significance testing allows us to make decisions about hypotheses within a particular context. | DAT-3.K Interpret the p-value for the chi-square test for homogeneity or independence. [Skill 4.B] | **SE/TE:** 700-701, 704-706, 714-718 |
| | DAT-3.L Justify a claim about the population based on the results of a chi-square test for homogeneity or independence. [Skill 4.E] | **SE/TE:** 700-701, 704-706, 714-718 |
| | 8.7 Skills Focus: Selecting an Appropriate Inference Procedure for Categorical Data (This topic is intended to focus on the skill of selecting an appropriate inference procedure now that students have a range of options. Students should be given opportunities to practice when and how to apply all learning objectives relating to inference for categorical data.) | **SE/TE:** 711-718 |

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| **Enduring Understanding** | **Topic/Learning Objective** | |
| **UNIT 9 Inference for Quantitative Data: Slopes** | | |
| VAR-1 Given that variation may be random or not, conclusions are uncertain. | 9.1 Introducing Statistics: Do Those Points Align? | |
| | VAR-1.K Identify questions suggested by variation in scatter plots. [Skill 1.A] | **SE/TE:** 720-721 |
| UNC-4 An interval of values should be used to estimate parameters, in order to account for uncertainty. | 9.2 Confidence Intervals for the Slope of a Regression Model | |
| | UNC-4.AC Identify an appropriate confidence interval procedure for a slope of a regression model. [Skill 1.D] | **SE/TE:** 730 |
| | UNC-4.AD Verify the conditions to calculate confidence intervals for the slope of a regression model. [Skill 4.C] | **SE/TE:** 722-727. 741 |
| | UNC-4.AE Determine the given margin of error for the slope of a regression model. [Skill 3.D] | **SE/TE:** 729-730 |
| | UNC-4.AF Calculate an appropriate confidence interval for the slope of a regression model. [Skill 3.D] | **SE/TE:** 732-734, 742-751 |
| UNC-4 An interval of values should be used to estimate parameters, in order to account for uncertainty. | 9.3 Justifying a Claim About the Slope of a Regression Model Based on a Confidence Interval | |
| | UNC-4.AG Interpret a confidence interval for the slope of a regression model. [Skill 4.B] | **SE/TE:** 732-734, 742-751 |
| | UNC-4.AH Justify a claim based on a confidence interval for the slope of a regression model. [Skill 4.D] | **SE/TE:** 732-734, 742-751 |
| | UNC-4.AI Identify the effects of sample size on the width of a confidence interval for the slope of a regression model. [Skill 4.A] | **SE/TE:** 736-738 |

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| **Enduring Understanding** | **Topic/Learning Objective** | |
| VAR-7 The t-distribution may be used to model variation. | 9.4 Setting Up a Test for the Slope of a Regression Model | |
| | VAR-7.J Identify the appropriate selection of a testing method for a slope of a regression model. [Skill 1.E] | **SE/TE:** 721-722, 727-730 |
| | VAR-7.K Identify appropriate null and alternative hypotheses for a slope of a regression model. [Skill 1.F] | **SE/TE:** 730, 732-734, 742-751 |
| | VAR-7.L Verify the conditions for the significance test for the slope of a regression model.  [Skill 4.C] | **SE/TE:** 732-734, 742-751 |
| VAR-7 The t-distribution may be used to model variation. | 9.5 Carrying Out a Test for the Slope of a Regression Model | |
| | VAR-7.M Calculate an appropriate test statistic for the slope of a regression model. [Skill 3.E] | **SE/TE:** 732-734, 742-751 |
| DAT-3 Significance testing allows us to make decisions about hypotheses within a particular context. | DAT-3.M Interpret the p-value of a significance test for the slope of a regression model.  [Skill 4.B] | **SE/TE:** 732-734, 742-751 |
| | DAT-3.N Justify a claim about the population based on the results of a significance test for the slope of a regression model. [Skill 4.E] | **SE/TE:** 732-734, 742-751 |
| | 9.6 Skills Focus: Selecting an Appropriate Inference Procedure (This topic is intended to focus on the skill of selecting an appropriate inference procedure now that students have a range of options. Students should be given opportunities to practice when and how to apply all learning objectives relating to inference.) | **SE/TE:** 742-751 |