Oxford City Schools

Proficiency Scale

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GRADE LEVEL: 10th - 12 Grade COURSE NAME: AP Biology

MEASUREMENT TOPIC: MT 10 Applying Statistical Tests and Data Analysis

4	In addition to Score 3, the student makes in-depth inferences and applications. • **Apply chi-squared testing to advanced scenarios, where expected outcomes are not equal to one another, such as inheritance problems and cell cycle counts.**

3	• **Evaluate hypotheses and predictions, based on data from chi squared hypothesis testing, including**
	  ◦ **Rejecting or failing to reject the null hypothesis**
	  ◦ **Supporting or refuting the alternative hypothesis**
	• **Perform chi squared hypothesis testing, including calculations of**
	  ◦ **Chi squared value**
	  ◦ **Critical value**
	  ◦ **Degrees of freedom**
	  ◦ **P value**

2	• **Evaluate hypotheses and predictions, based on data from confidence intervals, including**
	  ◦ **Rejecting or failing to reject the null hypothesis**
	  ◦ **Supporting or refuting the alternative hypothesis**
	• **Calculate 95% confidence intervals (+ - 2SEMs), and use confidence intervals to determine whether sample means are statistically different.**

1	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.
Key Vocabulary: sample mean, confidence interval, error bar, two standard errors of the mean (+ - 2SEM), p-value, degrees of freedom, critical value, chi squared	