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Rubrics in Action

NSTA Blog

General Laboratory Rubric

Section	Exemplary	Advanced	Proficient	Developing	Poor or Missing
	Exemplary (3 points)	Advanced (2.5 points)	Proficient (2 points)	Developing (1)	Poor or Missing (0)
Introduction	The student includes: • Clear, abundant background information based on a thorough literature search. • Proper “in text” citations, if necessary. • A rich description of the purpose and overview of the lab. • An exceptionally deep discussion all theoretical concepts.	The student includes: • Background information based on a given resource. • Proper “in text” citations, if necessary. • A brief description of the purpose and overview of the lab. • A full discussion of all theoretical concepts.	The student includes: • Acceptable background information based on a given resource. • “In text” citations with minor errors. • A limited description of the purpose and overview of the lab. • A brief discussion of most theoretical concepts.	The student includes: • Incomplete background information. • Incorrect “in text” citations. • A very limited description of the purpose and overview of the lab. • Unrelated information. • a limited discussion of theoretical concepts.	The submission satisfies one of more of the following: • No submission. • Missing Introduction. • Unrelated or plagiarized. • No effort exhibited.
Materials and Methods	Exemplary (2 points) The student includes: • A complete general outline of the procedure and task(s). • Succinct methods, procedure, and equipment used. • Organized and easy to follow steps in paragraph form. • Proper use of third person and past tense.	Advanced (1.5 points) The student includes: • A brief outline of the procedure and task(s). • Methods with missing one or more components, such as the procedure or equipment. • Procedure steps in paragraph form. • Text with mostly correct third person and past tense.	Proficient (1 points) The student includes: • An acceptable outline of the procedure and task(s). • Methods with several missing components, such as the procedure or equipment. • Methods that lack organization. • The use of first person or improper verb tense. • Improper use of grammar standards.	Developing (0.5) The student includes: • A very limited outline of the procedure and task(s). • Methods with incorrect, illogical, or unrelated text. • The use of first person or improper verb tense. • Improper use of grammar standards.	Poor or Missing (0) The submission satisfies one of more of the following: • No submission. • Missing Materials and Methods. • Unrelated or plagiarized. • No effort exhibited.
Results	Exemplary (5 points) The student includes: • Key results presented in an ordered and logical sequence. • Completed tables. • All calculations for mathematical findings.	Advanced (4 points) The student includes: • Results presented with organized tables and/or text. • Very minor errors in figures and tables presented. • Most calculations for mathematical findings.	Proficient (3 points) The student includes: • Results presented with appropriate tables and/or text. • Minor errors in figures and tables presented. • Most calculations for mathematical findings.	Developing (2) The student includes: • Results that are incomplete and/or fabricated. • Figures and tables that are poorly constructed or not present. • Major errors in figures and tables presented. • Results that are missing calculations.	Poor or Missing (0) The submission satisfies one of more of the following: • No submission. • Missing Results. • Unrelated or plagiarized. • No effort exhibited.
Discussion	Exemplary (5 points) The student includes: • Flawless interpretation of results. • Explanations of all data and results. • Comparisons between measured and theoretical values, if applicable. • Conclusions that are based on all data presented. • Connections between the Discussion and Introduction by way of the stated hypothesis and literature cited.	Advanced (4 points) The student includes: • An interpretation of results. • Most explanations of data and results. • Comparisons between measured and theoretical values, if applicable. • Conclusions that are based on most data presented. • Most connections between the Discussion and Introduction.	Proficient (3 points) The student includes: • Minimal interpretation of results. • A few explanations of data and results. • Some comparisons between measured and theoretical values, if applicable. • Missing connections between the Discussion and Introduction.	Developing (2) The student includes: • A poor interpretation of results. • Minimal explanations of data and results. • Little to no comparisons between measured and theoretical values, if applicable. • No connection between discussion and introduction.	Poor or Missing (0) The submission satisfies one of more of the following: • No submission. • Missing Discussion. • Unrelated or plagiarized. • No effort exhibited.

Levels and Scoring Scale

Criteria

Section	Exemplary	Advanced	Proficient	Developing	Poor or Missing
	Exemplary (3 points)	Advanced (2.5 points)	Proficient (2 points)	Developing (1)	Poor or Missing (0)
Introduction	The student includes: • Clear, abundant background information based on a thorough literature search. • Proper "in text" citations, if necessary. • A rich description of the purpose and overview of the lab. • An exceptionally deep discussion all theoretical concepts.	The student includes: • Background information based on a given resource. • Proper "in text" citations, if necessary. • A brief description of the purpose and overview of the lab. • A full discussion of all theoretical concepts.	The student includes: • Acceptable background information based on a given resource. • "In text" citations with minor errors. • A limited description of the purpose and overview of the lab. • A brief discussion of most theoretical concepts.	The student includes: • Incomplete background information. • Incorrect "in text" citations. • A very limited description of the purpose and overview of the lab. • Unrelated information. • a limited discussion of theoretical concepts.	The submission satisfies one of more of the following: • No submission. • Missing Introduction. • Unrelated or plagiarized. • No effort exhibited.
Materials and Methods	Exemplary (2 points) The student includes: • A complete general outline of the procedure and task(s). • Succinct methods, procedure, and equipment used. • Organized and easy to follow steps in paragraph form. • Proper use of third person and past tense.	Advanced (1.5 points) The student includes: • A brief outline of the procedure and task(s). • Methods with missing one or more components, such as the procedure or equipment. • Procedure steps in paragraph form. • Text with mostly correct third person and past tense.	Proficient (1 points) The student includes: • An acceptable outline of the procedure and task(s). • Methods with several missing components, such as the procedure or equipment. • Methods that lack organization. • The use of first person or improper verb tense. • Improper use of grammar standards.	Developing (0.5) The student includes: • A very limited outline of the procedure and task(s). • Methods with incorrect, illogical, or unrelated text. • The use of first person or improper verb tense. • Improper use of grammar standards.	Poor or Missing (0) The submission satisfies one of more of the following: • No submission. • Missing Materials and Methods. • Unrelated or plagiarized. • No effort exhibited.
Results	Exemplary (5 points) The student includes: • Key results presented in an ordered and logical sequence. • Completed tables. • All calculations for mathematical findings.	Advanced (4 points) The student includes: • Results presented with organized tables and/or text. • Very minor errors in figures and tables presented. • Most calculations for mathematical findings.	Proficient (3 points) The student includes: • Results presented with appropriate tables and/or text. • Minor errors in figures and tables presented. • Most calculations for mathematical findings.	Developing (2) The student includes: • Results that are incomplete and/or fabricated. • Figures and tables that are poorly constructed or not present. • Major errors in figures and tables presented. • Results that are missing calculations.	Poor or Missing (0) The submission satisfies one of more of the following: • No submission. • Missing Results. • Unrelated or plagiarized. • No effort exhibited.
Discussion	Exemplary (5 points) The student includes: • Flawless interpretation of results. • Explanations of all data and results. • Comparisons between measured and theoretical values, if applicable. • Conclusions that are based on all data presented. • Connections between the Discussion and Introduction by way of the stated hypothesis and literature cited.	Advanced (4 points) The student includes: • An interpretation of results. • Most explanations of data and results. • Comparisons between measured and theoretical values, if applicable. • Conclusions that are based on most data presented. • Most connections between the Discussion and Introduction.	Proficient (3 points) The student includes: • Minimal interpretation of results. • A few explanations of data and results. • Some comparisons between measured and theoretical values, if applicable. • Missing connections between the Discussion and Introduction.	Developing (2) The student includes: • A poor interpretation of results. • Minimal explanations of data and results. • Little to no comparisons between measured and theoretical values, if applicable. • No connection between discussion and introduction.	Poor or Missing (0) The submission satisfies one of more of the following: • No submission. • Missing Discussion. • Unrelated or plagiarized. • No effort exhibited.

Standards for Performance