

Category & considerations	Application materials to review	(1) Poor	(2) Fair	(3) Satisfactory	(4) Good	(5) Excellent
<p>Overall quality of abstract</p> <ul style="list-style-type: none"> ▸ Age-appropriate grammar, spelling, sentence structure ▸ Coherent thought processes ▸ Abstract should generally contain: Introduction, Explanation of why the topic is important, Statement about gap in knowledge, hypothesis, research methods and approach, summary of findings. 	<p>Written abstract</p>	<p>Student includes 0-1 items from abstract outline, uses poor grammar/sentence structure, and/or thought processes are incoherent.</p>	<p>Student includes 1-2 items from abstract outline, uses below average grammar/sentence structure, and/or thought processes are coherent but poorly developed.</p>	<p>Student includes 2-3 items from abstract outline, uses average grammar/sentence structure, and thought processes are coherent and somewhat developed.</p>	<p>Student includes 3-4 items from abstract outline, uses above average grammar/sentence structure, and thought processes are coherent and well developed.</p>	<p>Student includes 5+ items from abstract outline, uses outstanding grammar/sentence structure, and thought processes are coherent, detailed, and well developed.</p>
<p>Introduction, literature review, demonstration of gap in knowledge</p> <ul style="list-style-type: none"> ▸ Does the student demonstrate sufficient understanding of the current state of the field? ▸ Does the student address the gap in knowledge they are working to fill with their project? 	<p>Written abstract</p>	<p>Student does not include any references, demonstrates little to no understanding of current state of field, and/or does not mention the gap in knowledge.</p>	<p>Student includes minimal or irrelevant references, demonstrates poor understanding of current state of field, and/or does not mention the gap in knowledge.</p>	<p>Student includes some relevant references, demonstrates average understanding of current state of field, and mentions the gap in knowledge.</p>	<p>Student includes adequate references, demonstrates above average understanding of current state of field, and addresses the gap in knowledge.</p>	<p>Student includes adequate references, demonstrates superior understanding of current state of field, and addresses the gap in knowledge.</p>

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<p>Experimental/Study design, procedures, and problem solving</p> <ul style="list-style-type: none"> ▸ Does the project involve a well-thought-out experimental design or methodology? ▸ Were the methods relevant to answering the research question? ▸ Were the methods used correctly and described sufficiently? ▸ Were controls used? ▸ Is the data collection process rigorous and systematic? 	<p>Written abstract</p>	<p>Student does not have a clear research question, uses insufficient methods or uses methods incorrectly, does not adequately describe methods, and/or does not incorporate use of proper controls.</p>	<p>Student has a research question though it is underdeveloped or unclear, uses insufficient methods to address question, describes methods briefly, and/or does not incorporate use of proper controls.</p>	<p>Student has a clear research question though it is underdeveloped, uses relevant methods to address question, describes methods but not in great detail, and employs some experimental controls.</p>	<p>Student has a clear and thoughtful research question, uses relevant methods to address question, describes methods with an above-average understanding, and employs relevant experimental controls.</p>	<p>Student has a clear and thoughtful research question that is well developed, uses relevant methods to address question, describes methods in great detail, and shows superior use/understanding of relevant experimental controls.</p>
<p>Interpretation of results and impact</p> <ul style="list-style-type: none"> ▸ Are the data analyzed appropriately? ▸ Can the project potentially contribute to the scientific community or address a real-world problem? ▸ Does it have the potential to make a significant impact? At a local or small scale? 	<p>Written abstract</p>	<p>Student did not perform or suggest any data analysis, drew inappropriate conclusions, and/or did not address any potential impact of research.</p>	<p>Student performed or suggested minimal/inadequate data analysis, drew few conclusions though they may be irrelevant, and/or did not address potential impact of research.</p>	<p>Student performed or suggested appropriate data analysis, drew conclusions though they may not be well-supported, and addressed potential impact of research.</p>	<p>Student performed relevant data analysis, drew appropriate conclusions with supporting evidence, and addressed potential impact of research.</p>	<p>Student performed relevant and high-level data analysis, drew well-supported conclusions, and thoughtfully addressed potential impact of research.</p>

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<p>Quality of Research Question</p> <ul style="list-style-type: none"> ▸ Is the research question or topic challenging and not easily answerable with basic information? ▸ Does it involve exploring complex scientific concepts or theories? 	<p>Written abstract</p>	<p>The research question is basic, common, and easily answerable with basic information; and/or the research question lacks depth and requires minimal investigation.</p>	<p>The research question is somewhat challenging but lacks originality; and/or the research question requires some research but lacks depth in inquiry.</p>	<p>The research question is challenging and requires some depth of investigation; and the research question demands a moderate level of research and inquiry.</p>	<p>The research question is complex, original, and demands substantial exploration; and the research question requires in-depth research and thorough investigation.</p>	<p>The research question is highly challenging and exceptionally original, involving exploration of complex scientific concepts or theories; and the research question necessitates extensive research and a deep level of inquiry.</p>
<p>Effort and ownership</p> <ul style="list-style-type: none"> ▸ Did the student <u>state exactly</u> what each of their contributions were to the project? 	<p>Statement of Outside Assistance form</p>	<p>Student did not demonstrate appreciable contributions to this work and/or their application did not correlate with the amount of contribution listed on their form.</p>	<p>Student participated in research but was clearly not driving the project and/or their application did not correlate with the amount of contribution listed on their form.</p>	<p>Student contributed substantially to data produced and interpretation of data but did not participate in design.</p>	<p>Student was the main contributor to data production & interpretation and also participated in design of experiment.</p>	<p>Student was nearly the sole contributor to project design, data production, and interpretation of results.</p>

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<p>Level of research project difficulty</p> <ul style="list-style-type: none"> ▸ Is this amazing for a high school student or what you expect from just a school assignment? ▸ Was the way a student approached the question particularly creative or innovative? ▸ Is it feasible for a high school student to undertake <u>given their available resources</u>? 	<p>Entirety of application (abstract, Statement of Outside Assistance, and on application “Custom questions” - “Completed Research” & “Amount of Time Collecting Data”)</p>	<p>Research was basic in nature and/or very little time or effort was spent conducting research.</p>	<p>Research could be expected to be done by a high school student and/or minimal time or effort was spent conducting research.</p>	<p>Research was average high school level and appreciable amount of time and effort was spent conducting research.</p>	<p>Research was above average high school level and significant amount of time and effort was spent conducting research.</p>	<p>Research was far above average high school level and significant amount of time and effort was spent conducting research.</p>
<p>Explanation of research</p> <ul style="list-style-type: none"> ▸ Can the student explain complex concepts clearly and concisely to a lay audience? 	<p>"Non-scientific Audience" Question on application “Custom questions”</p>	<p>Student answered question very poorly, used terms mainly meant for an expert audience, and/or copied & pasted their entire abstract as an answer for this question.</p>	<p>Student answered question poorly, used some terms meant for an expert audience, and/or copied & pasted large portions of their abstract as an answer for this question.</p>	<p>Student answered question coherently, used only a few terms meant for an expert audience, and did not copy & paste any portion of their abstract as an answer for this question.</p>	<p>Student answered question well, used terms meant for a lay audience, and did not copy & paste any portion of their abstract as an answer for this question.</p>	<p>Student answered question extraordinarily, exclusively used terms meant for a lay audience, and did not copy & paste any portion of their abstract as an answer for this question.</p>

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<p>Adherence to directions › Did the student follow the directions for submission?</p>	<p>Entirety of application (abstract, Statement of Outside Assistance, additional application “Custom Questions”)</p>	<p>The submission does not adhere to any formatting or style guidelines, and/or most additional questions or questions on forms were answered inadequately.</p>	<p>The submission partially adheres to formatting and style guidelines, and/or some additional questions or questions on forms were answered inadequately.</p>	<p>The submission mostly adheres to formatting and style guidelines with only a few minor exceptions, and most additional questions and questions on forms were answered adequately.</p>	<p>The submission closely follows formatting and style guidelines, and all additional questions and questions on forms were answered adequately.</p>	<p>The submission perfectly adheres to all formatting and style guidelines, and all additional questions and questions on forms were answered with exceptional clarity.</p>