# Olympic Records Rubric

Students analyze Olympic records data in running, swimming, or speed skating. They analyze the change over time using scatter plots and linear regression.

|  | Wow! | Getting There | Needs Improvement |
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| Three-column tables | The student has produced both three-column tables. The third column includes correctly computed average speeds. | The student has created both three- column tables but their method for computing average speed resulted in errors. | The student did not include both of the tables, or both tables are not formatted correctly. |
| Scatterplots with line of best fit | The student has produced two scatterplots. Each scatterplot features a line of best fit and an accompanying equation. | The student has produced two scatterplots, but forgot to include a line of best fit and / or the accompanying equation for the line of best fit. | The student did not include both scatterplots. |
| Pyret code | The student provides contracts and clear purpose statements for each and every function. There are no failed examples. | Occasionally, the student forgets a contract or provides a confusing purpose statement. There is one failed example. | There are frequent missing contracts and purpose statements. There are multiple failed examples. |
| Analysis / explanation of line of best fit | The student has accurately and thoughtfully interpreted all of the five required features: (1) slope, (2) y-intercept, (3) line of best fit, and (4) correlation coefficient. The student has described each of these features in the context of the Olympic data and displays, rather than providing generic definitions. | The student sometimes described the four required features in detail and in context, but sometimes defaulted to generic explanations that are not specific enough or suited to the project. The student needs to add more specific detail to their written interpretations in order to show true understanding of the concepts. | The student often relied on generic, out-of-context explanations of slope, y-intercept, line of best fit, and correlation coefficient. Their writing does not reveal that they have an in-depth understanding of these concepts. |
| Concluding discussion | Students clearly articulated how all of the threats to validity cause problems to the study’s conclusions. Students explained what changes must be made in order to minimize the threats. | The discussion of how the threats caused problems is lacking in detail and evidence / analysis. Students explained the changes that must be made to minimize threats, but need to provide more explanation. | The concluding discussion is lacking in detail and evidence. It is unclear if the students understand how threats to validity influence a study. Students do not appear to understand how to revise the study to minimize threats. |

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