**Activites**

*Optimal Velocity* is a game that offers players a choice of 3 tracks and 4 cars. After several races, Nick thinks he may not be choosing the best car for each track.

In a gaming magazine, he finds the cars rated on a 10-point scale for handling (how comfortably and safely they cope with bends and uneven surfaces), acceleration, and speed:

1. According to the information in the graphs, which car would be best for each track and why?
   a. Drag strip (long and straight)
   b. Hill climb (very windy – lots of hairpin turns)
   c. Circuit (oval race track).

2. a. Using your copy of the game results, create graphs that show Nick’s times for his first 36 races. (It is probably best to make separate graphs for each track.)
   b. Is Nick improving? Explain your conclusions to a classmate, using your graphs to support them.
   c. What variables other than choice of car might you need to take into account when assessing Nick’s progress?

### Race number | Track    | Time (minutes) |
<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hill climb</td>
<td>5:02</td>
</tr>
<tr>
<td>2</td>
<td>Drag strip</td>
<td>1:12</td>
</tr>
<tr>
<td>3</td>
<td>Drag strip</td>
<td>0:58</td>
</tr>
</tbody>
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