

# Optimal Velocity

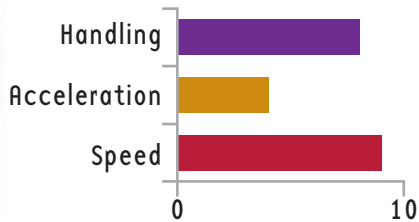
**You need:** ★ game results (see copymaster) ★ a computer spreadsheet/graphing program (optional)  
★ a classmate

## Activity

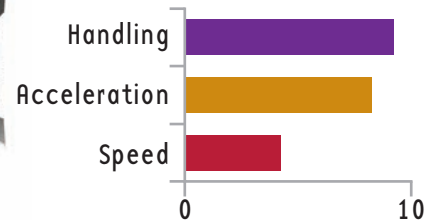
*Optimal Velocity* is a game that offers players a choice of 3 tracks and 4 cars. After several races, Nick thinks he may not be choosing the best car for each track.

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:

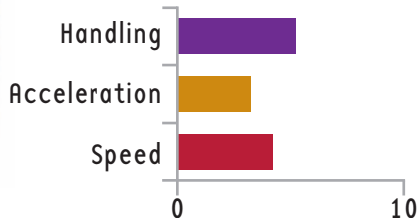
**Car 1**



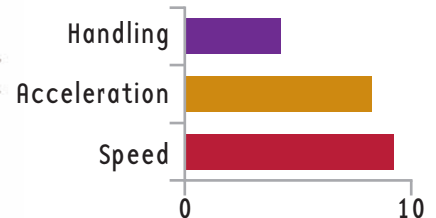
**Car 2**



**Car 3**



**Car 4**



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)
1	Hill climb	5:02
2	Drag strip	1:12
3	Drag strip	0:58

**Focus** Investigating change over time