

The World Record for the Mile

Athletes continue to run the mile faster and faster as the years go by, but to run a mile in, say, one minute would seem impossible. The table shows the world record for the mile against year between 1913 and 1979.

<i>Date of Race</i>	<i>Record</i>
31.05.1913	4 min 14.4 sec
16.07.1915	4 min 12.6 sec
23.08.1923	4 min 10.4 sec
04.10.1931	4 min 09.2 sec
15.07.1933	4 min 07.6 sec
28.08.1937	4 min 06.4 sec
10.07.1942	4 min 06.2 sec
18.07.1944	4 min 01.6 sec
17.07.1945	4 min 01.4 sec
06.05.1954	3 min 59.4 sec
19.07.1957	3 min 57.2 sec
06.08.1958	3 min 54.5 sec
27.01.1962	3 min 54.4 sec
17.11.1964	3 min 54.1 sec
09.06.1965	3 min 53.6 sec
17.07.1966	3 min 51.3 sec
23.06.1967	3 min 51.1 sec
12.08.1975	3 min 49.4 sec
17.07.1979	3 min 49.0 sec

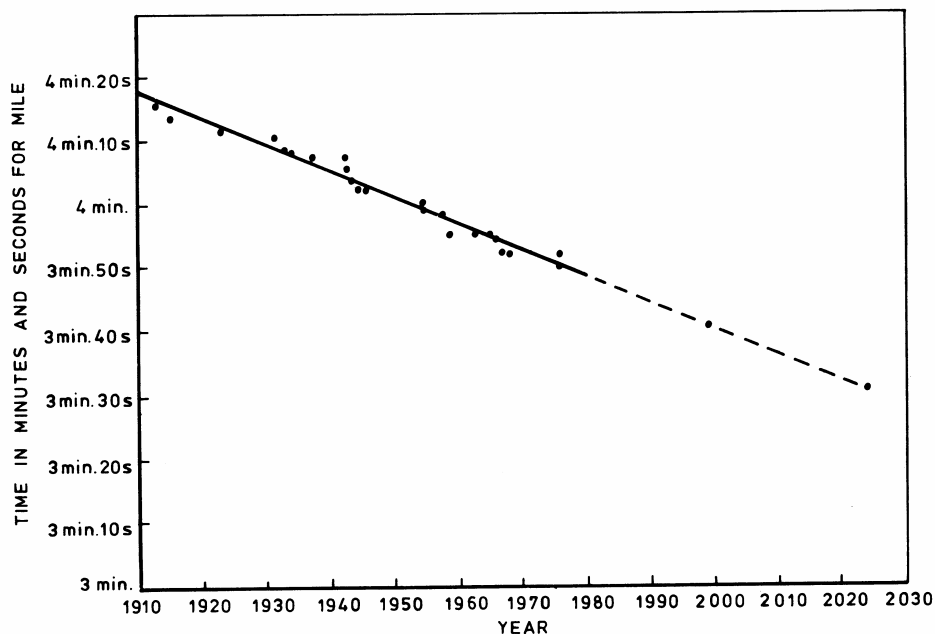
- Draw a graph showing this data.
- Use the graph to estimate when it is likely that the mile could be run in 3 minutes 40 seconds or 3 minutes 30 seconds.

Could a mile be run in 3 minutes in the UK before it is flooded?

The World Record for the Mile - SOLUTION

Athletes continue to run the mile faster and faster as the years go by, but to run a mile in, say, one minute would seem impossible. The graph shows the world record for the mile against year. Using the graph, estimate when it is likely that the mile could be run in

3 minutes 40 seconds or 3 minutes 30 seconds.



Graph showing the world record for the mile

From the graph we could deduce that the 3 minute 30 second mile can be run between 2010 and 2020. We could go further and predict the 0 minute mile in around the year 2470.

Clearly nonsense, but it does put into perspective some of the misuses of mathematics by social scientists, environmentalists etc. Perhaps the UK will not be flooded soon after 2070. (Yes, we should be concerned about the abuse of our environment but we should be cautious about the misuse of simple mathematical tools to model it.)

With empirical modelling we can only be certain of what has happened *within* the data not outside it. Students need to be aware that empirical modelling is not generally a very good approach and they should be developing theoretical modelling skills.