

TL9: Fair comparisons which can be used across events

There are (at least) three problems to be resolved in comparing performances across events. One is that in field events the performances get larger, whereas in track and swimming they get smaller; a second is the units vary and finally the raw figures are much greater in the longer events, but this does not necessarily mean a greater improvement as 1 second (for example) is a huge margin in a 100 metre sprint and a tiny margin in a marathon. All of these are solved by using a proportional measure of improvement such as a percentage improvement from the first performance.

Pupils have previously identified the fact that to have a fair comparison of men's and women's improvements they need to hold constant as many variables as possible. Generally this would mean starting from the year the women first competed (though one could take the time period that women have competed and start each gender from their first competition). There are arguments for each of measuring the change to the most recent Olympics or to the best performance. However while so far it has not mattered that different groups may have used different (valid) approaches it is now essential that all events are analysed in the same way.

How you shape this discussion will depend on what approaches pupils have used and their familiarity with percentages. Once again, a sample calculation for the 800 metre event is modelled below and, for your information, the results of two ways of analysis are tabulated for all events –this shows that both types of approaches produce similar answers to the overall question about men and women and hence reinforce each other (strengthening confidence in the findings)

800m track model

	1928 performance (s)	2008 performance (s)	Difference (s)	% improvement
Men	111.8	104.65	7.15	6.4%
Women	136.8	114.87	21.93	16.0%

Two types of analysis

Event	From	Percentage improvement from when women first competed			
		To the last Olympics		To the best result	
		Women	Men	Women	Men
100m track	1928	11.6%	10.3%	13.6%	10.3%
400m track	1964	4.6%	2.4%	7.2%	3.6%
800m track	1928	16.0%	6.4%	17.1%	8.2%
Long jump	1948	23.6%	9.1%	29.8%	14.0%
Shot Put	1948	49.5%	25.6%	63.0%	31.3%
Javelin	1932	63.5%	24.9%	71.0%	30.0%
100m freestyle	1912	35.4%	25.6%	35.3%	25.6%

Key principles for reflection

To assist in comparing across contexts, relative comparisons must be used.