Are you suited? - Teacher' Notes (Scatter Graphs)

This activity is designed to introduce correlation and scatter graphs and to help learners:

- relate individual statistical techniques to a wider problem;
- consider relationships and correlation between variables;
- plot scatter graphs;
- draw lines of best fit;
- make predictions using the line of best fit;
- report and discuss results;
- draw conclusions.

Introduction

Ask pupils how they think dating agencies match their clients.

Activity

- Ask pupils to work in pairs. It may be more effective if you pair a boy with a girl where possible.
- Cut the hand-out down the middle and give each pupil in the pair either the films for student 1 or student 2.
- Without looking at what the other person is writing. Ask the pupils to rank the films one to 10. One being the worst and 10 the best.
- Once they have done this ask the student to put the two strips side by side so the films match up.
- Now plot the rankings on the graph grid provided.
  e.g.: For the two students opposite, who ranked Lord of the Rings 4th and 7th, we plot the point on the grid below as (4,7)
- Do this for the 10 films.

Lord of the Rings	Lord of the Rings
Rank *4*	Rank *7*

Inspect the scatter graphs. Are any of your pupils suited?
Ask the pupils to comment on the shapes of their scatter graphs.

- Is there any positive or negative correlation between the two variable.
- Are there any outliers? What does the outlier actually mean?
- Could they draw a line of best fit? If there is no correlation then they need to discuss why they should not draw a line of best fit.
- What does either a positive or negative correlation mean in this context?
- If it is appropriate to draw a line of best fit. What could they use this for? (They could they predict a ranking of a film that one of them had seen and the other had.)
- Discuss how accurate the prediction would be. (How much scatter is there about the line of best fit?)