Winning the Lottery

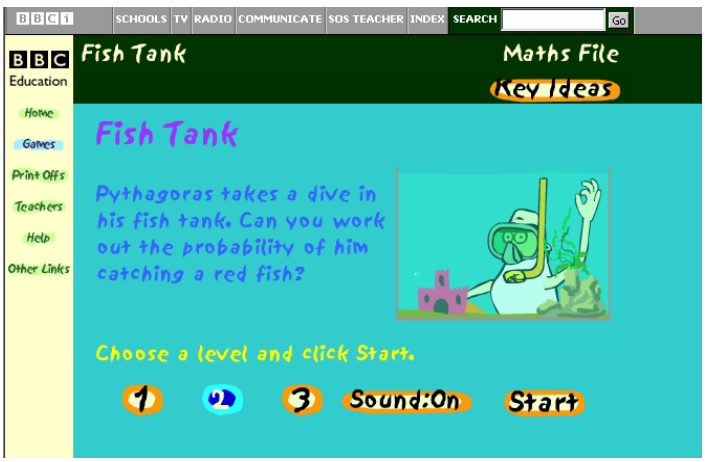
Each week in the UK we have a lottery that takes place twice weekly. It costs a pound to participate. Seven balls are randomly drawn from 49, six main balls, then a bonus ball . If you match all six main balls you win the jackpot. Various prizes are won for different combinations of the balls, for example, match any three balls out of the main six, and you will win ten pounds.

Think about the chances of the following:
What is the probability of drawing ball number 5?
What is the probability of drawing an even numbered ball? Do you have the same chance of drawing an odd numbered ball?
What chance do you have of drawing a ball containing a digit of 1?
Are you more likely to draw a ball which is a square number or one which is prime?

Thirteen is often classed as an unlucky number. Do you think this is true? Look at the table below. It shows the frequency of the number of times the balls have appeared to date. Which 5 numbers have appeared the most times? Which have appeared the least? Based on the figures in the table would you say that thirteen is unlucky? If you could play the lottery which six numbers would you pick and why?

1=91	2=102	3=90	4=90	5=88	6=94	7=98	8=91	9=94	10=98
11=100	12=95	13=75	14=93	15=87	16=85	17=86	18=92	19=92	20=81
21=79	22=84	23=107	24=91	25=106	26=91	27=99	28=102	29=93	30=97
31=108	32=107	33=98	34=87	35=98	36=95	37=87	38=123	39=82	40=102
41=80	42=85	43=107	44=115	45=99	46=97	47=108	48=97	49=86	

Taken from http://www.lottery.co.uk/ May 2003



The game opposite can be played interactively on http://www.bbc.co.uk/education/mathsfile/shockwave/games/fish.html
It tests your knowledge of probability and effective use of equivalent fractions.
See if you can complete all 3 levels without any mistakes. You might win a 'prize'