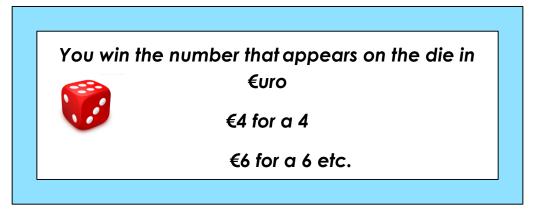# WS10.04   Using an Enquiry Approach to Teaching

Fair Game – Student Activity 1

A funfair game called **Numbers Up!** involves rolling a single die.
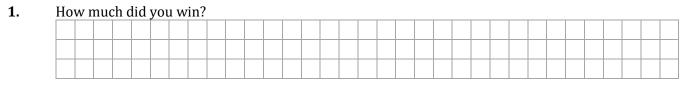
These are the rules:

> ### You win the number that appears on the die in €uro
>
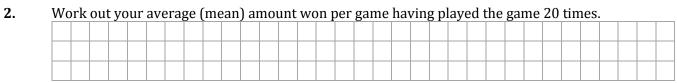> ### €4 for a 4
>
> ### €6 for a 6 etc.

Working in pairs, use a die or the random integer function on your calculator, to generate numbers from 1 to 6.

Play the game 20 times and record your results in the table below:

Game	Amount Won	Game	Amount Won
1		11	
2		12	
3		13	
4		14	
5		15	
6		16	
7		17	
8		18	
9		19	
10		20	

1. How much did you win?

2. Work out your average (mean) amount won per game having played the game 20 times.

3. When you have the value for the class mean, fill in the table below:

Your Average Amount Won	
The Class Average Amount Won	

4. Does your average differ from that of the class?

What could explain this?

5. What do you think the class average figure represents in the context of the game?

6. Would you pay €2 to play this game? Give a reason for your answer.

7. If you ran the ***Numbers Up!*** game at the funfair, how much would you charge people to play it? Explain your answer.

8. What do you think would be a fair price to pay to play this game? Why?

ROUND ONE

Number of opened box	Value of opened box	Boxes Remaining	
		21	
		20	
		19	
		18	
		17	
Prize Money Remaining		Banker's Offer	
Expected Value (EV)		Deal or No Deal?	

ROUND TWO

Number of opened box	Value of opened box	Boxes Remaining	
		16	
		15	
		14	
Prize Money Remaining		Banker's Offer	
Expected Value (EV)		Deal or No Deal?	

ROUND THREE

Number of opened box	Value of opened box	Boxes Remaining	
		13	
		12	
		11	
Prize Money Remaining		Banker's Offer	
Expected Value (EV)		Deal or No Deal?	

ROUND FOUR

Number of opened box	Value of opened box	Boxes Remaining	
		10	
		9	
		8	
Prize Money Remaining		Banker's Offer	
Expected Value (EV)		Deal or No Deal?	

ROUND FIVE

Number of opened box	Value of opened box	Boxes Remaining	
		7	
		6	
		5	
Prize Money Remaining		Banker's Offer	
Expected Value (EV)		Deal or No Deal?	

ROUND SIX

Number of opened box	Value of opened box	Boxes Remaining	
		4	
		3	
		2	
Prize Money Remaining		Banker's Offer	
Expected Value (EV)		Deal or No Deal?	

Fill in the missing values in the table below:

Amount	Amount	Amount	Amount	Amount	Expected Value (EV)	Banker's Offer	Banker's Offer as % of EV
€100	€10,000	€20,000	€35,000	€100,000		€30,000	
€1	€250	€3,000	€35,000	€75,000		€14,500	
50c	€750	€1,000	€3,000	€50,000			37.50%
€1,000	€10,000		€100,000	€250,000	€82,200	€67,000	
10c	€1	€100	€500	€20,000		€2,800	
€20,000		€50,000	€75,000	€100,000	€56,000	€41,000	
1c	€10	€5,000	€10,000	€75,000			69.44%