Fair Game – Student Activity 1

A funfair game called *Numbers Up!* involves rolling a single die.

These are the rules:



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.

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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?

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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 Re	emaining
		2	1
		2	0
		1	.9
		1	.8
		1	.7
Prize Money Remaining		Banker's Offer	
Expected Value (EV)		Deal or No Deal?	

ROUND TWO

Number of opened box	Value of opened box	Boxes Re	emaining
		1	6
		1	5
		1	4
Prize Money Remaining		Banker's Offer	
Expected Value (EV)		Deal or No Deal?	

ROUND THREE

Number of opened box	Value of opened box	Boxes Re	emaining
		1	3
		1	2
		1	1
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?		

Expected Value – Student Activity 3

Amount	Amount	Amount	Amount	Amount	Expecte d 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%

Fill in the missing values in the table below: