



AUSTRALIAN International School
المدرسة الأسترالية الدولية

Middle School

STUDENT NAME: _____

CLASS: _____

TEACHER NAME: _____

UNIT: Chance and Data

ISSUE TOPIC: Probability

ASSESSMENT TASK: Investigation

ASSESSMENT DESCRIPTION: In this investigation, students must:

- Make predictions about expected probability.
- Plan activities and investigations to explore probability concepts through the game show 'Deal or No Deal'.
- Express estimates of probability in different ways *ie impossible/certain, percentages, common fractions or decimal fractions between 0 and 1, '1 in 4' chance etc*
- Compare theoretical probability with experimental probability.

CONDITIONS OF ASSESSMENT:

- Length: 2 weeks – the amount of class time to be determined by the teacher.
- The use of presentation software is expected *ie powerpoint, word processing.*

SUMMARY OF RESULTS

CRITERIA ASSESSED	STANDARD
KNOWLEDGE & UNDERSTANDING	
THINKING AND REASONING	
OVERALL RESULT	

Mathematics

YEAR 6/7

2010/2011

TERM 3

TASK:

Investigation

'What Are the Chances?'

What Are the Chances?

DUE DATE:

Context:

You have been talking with your older cousin, who is living in Australia. He is thinking about moving out of home and buying his first house. He has found a house that he is interested in purchasing, but he needs just a little bit more money - \$150 000 (around 570 000 AED). Your cousin has a plan.

He has discussed with you the idea of being a contestant on the popular television game show, '**Deal or No Deal**' as he thinks he has a good chance of winning at least \$150 000. You have discussed the meaning of 'good chance' with your cousin, as you have been studying probability at school. He is very interested in your advice as to whether it is worthwhile being a contestant on this game show.

You have decided to investigate this further. You intend to email him with your findings in about 2 weeks.

Your Task

- First, play an online example of the game, so that you understand the rules.
www.mofunzone.com/online_games/deal_or_no_deal.shtml
- Once you understand how the game is played, write a statement about whether you think your cousin has a 'good chance' of winning at least \$150 000. Include in your statement examples of events that are more likely, or less likely, in your opinion. Give reasons to support your statement. Represent your examples on a 'Probability Continuum'.
- What is the theoretical probability that the first case you choose, or your initial case, contains a value greater than \$150 000? Are there other ways to describe this?
- Play the game to analyse how the probability of having an initial case that contains a value greater than \$150 000 changes after every subsequent case is chosen and eliminated during the game. Graph your results as an Excel Chart.
- Now, play the game repeatedly and gather enough data to answer the question 'What is the experimental probability of winning at least \$150 000 on Deal or No Deal?'. Again, present your data as an Excel Chart. **After each game, record how much was in your initial case. This data is needed for the next question.**
- How does the theoretical probability of having an initial case that contains a value greater than \$150 000 compare to the experimental probability? Do your results surprise you?
- Finally, having completed some experimental probability analysis, what is your final statement to your cousin regarding his chances of achieving his goal.

Your investigation needs to be emailed to your cousin via your MST teacher, so he can check the quality of your analysis.

BON CHANCE!!