**Data Management**

**Unit 2 Line Master 3a**

Probability with Number Cubes

**Part A: Single-Outcome Events**

A number cube labelled from 1 to 6 is rolled.

What are the possible outcomes?

What is the theoretical probability of each outcome?

|  |  |
| --- | --- |
| ● rolling a 4  ● rolling a 1 or a 3 | ● rolling an odd number  ● rolling a number less than 3 |

Roll the number cube 30 times. Record your results.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Outcome** | 1 | 2 | 3 | 4 | 5 | 6 |
| **Results** |  |  |  |  |  |  |

Find the experimental probability of each outcome.

|  |  |
| --- | --- |
| ● rolling a 4  ● rolling a 1 or a 3 | ● rolling an odd number  ● rolling a number less than 3 |

How do these probabilities compare with the theoretical probabilities?  
Explain.

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**Unit 2 Line Master 3b**

Probability with Number Cubes (cont’d)

Combine your results with those of another pair.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Outcome** | 1 | 2 | 3 | 4 | 5 | 6 |
| **Combined Results** |  |  |  |  |  |  |

What is the experimental probability of each outcome now?

|  |  |
| --- | --- |
| ● rolling a 4  ● rolling a 1 or a 3 | ● rolling an odd number  ● rolling a number less than 3 |

How do the experimental probabilities compare with the theoretical   
probabilities now? Explain.

What do you think might happen if you rolled the number cube   
500 times?

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**Unit 2 Line Master 3c**

Probability with Number Cubes (cont’d)

**Part B: Experiments Involving Two Independent Events**

Two number cubes labelled from 1 to 6 are rolled and   
the numbers added.

Use a tree diagram or a table to find all possible outcomes.

Choose 3 sums. Determine the theoretical probability of   
rolling each sum.

|  |  |
| --- | --- |
| **Sum** | **Theoretical Probability** |
|  |  |
|  |  |
|  |  |

Roll the number cubes 30 times. Record your results.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sum** | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| **Results** |  |  |  |  |  |  |  |  |  |  |  |

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**Unit 2 Line Master 3d**

Probability with Number Cubes (cont’d)

Find the experimental probability of each of your 3 sums.

|  |  |
| --- | --- |
| **Sum** | **Experimental Probability** |
|  |  |
|  |  |
|  |  |

How do these probabilities compare with the theoretical probabilities?   
Explain.

Combine your results with others who used the same sums.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sum** | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| **Results** |  |  |  |  |  |  |  |  |  |  |  |

What is the experimental probability of each sum now?

|  |  |
| --- | --- |
| **Sum** | **Experimental Probability** |
|  |  |
|  |  |
|  |  |

**Data Management**

**Unit 2 Line Master 3e**

Probability with Number Cubes (cont’d)

How do the experimental probabilities compare with   
the theoretical probabilities now? Explain.

What do you think might happen if you rolled the number cubes   
500 times?