

Unit 3: Combinations

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|----------------|---|---|---|---|
| 3.00 | Prerequisite Skills | | | |
| Learning Goals | I know how to evaluate factorials | 1 | 2 | 3 |
| | I know how to calculate permutations | 1 | 2 | 3 |
| | I know how to extend Pascal's triangle | 1 | 2 | 3 |
| | I know how to calculate probabilities | 1 | 2 | 3 |
| | I know how to use a tree diagram | 1 | 2 | 3 |
| | I know how to draw and use a Venn diagram | 1 | 2 | 3 |
| | I know how to simplify expressions | 1 | 2 | 3 |
| 3.10 | Permutations with Non-Ordered Elements | | | |
| Learning Goals | I can recognise the advantages of different counting techniques. | 1 | 2 | 3 |
| | I can make connections between situations that involve permutations and combinations. | 1 | 2 | 3 |
| 3.20 | Combinations | | | |
| Learning Goals | I can recognise the advantages of using permutations and combinations over other counting techniques. | 1 | 2 | 3 |
| | I can apply combinations to solve counting problems. | 1 | 2 | 3 |
| | I can express combinations in standard notation: $C(n,r)$, ${}_nC_r$, $\binom{n}{r}$. | 1 | 2 | 3 |
| 3.30 | Problem Solving with Combinations | | | |
| Learning Goals | I can distinguish situations that use permutations from those that use combinations. | 1 | 2 | 3 |
| | I can solve problems using the rule of sum and the fundamental counting principle. | 1 | 2 | 3 |
| 3.40 | Combinations and Pascal's Triangle | | | |
| Learning Goals | I can make connections between combinations and Pascal's triangle. | 1 | 2 | 3 |
| 3.50 | Probabilities Using Combinations | | | |
| Learning Goals | I can solve probability problems using counting principles. | 1 | 2 | 3 |
| 3.60 | Review | | | |
| 3.65 | Extra Review (if necessary) | | | |
| 3.70 | Test | | | |

After each lesson grade yourself from one to three on each learning goal based on the criteria below. This will help you to build a review plan for the end of unit assessment.

- 1. I need extra help with this concept**
- 2. I need more practice with this concept**
- 3. I can teach this concept to someone else**

Unit 3 – Combinations

3.00 – MHR Page 102 #s 1 – 17

3.10 – MHR Page 108 #s 1 – 9 & 13

3.20 – MHR Page 113 #s 1 – 5, 8 & 10

3.30 – MHR Page 120 #s 1 – 5

3.35 – MHR Page 120 #s 6 – 8 & 10

3.40 – MHR Page 126 #s 1 – 3, 5, 6 & 13abc

3.50 – MHR Page 132 #s 1 – 4, 6 & 7

3.60 – MHR Page 134 #s 1 – 17

3.65 – MHR Page 136 #s 1 – 17

3.70 – TEST – Combinations