| Warm Ups 3/5/2014 |
| :--- |
| 1. How many possible outcomes are there when you roll a regular |
| game die? |
| 2. How many possible outcomes are there when you roll 2 dice? |
|  |

Feb 19-8:08 AM

| Product Table for 2 die |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Green | Die |  |  |  |  |  |
|  |  | 1 | 2 | 3 | 4 | 5 | 6 |  |
| Red Die | 1 | $(1,1)$ | (1, 2) | (1, 3) | $(1,4)$ | $(1,5)$ | $(1,6)$ |  |
|  | 2 | $(2,1)$ | $(2,2)$ | $(2,3)$ | $(2,4)$ | $(2,5)$ | $(2,6)$ |  |
|  | 3 | $(3,1)$ | $(3,2)$ | $(3,3)$ | $(3,4)$ | $(3,5)$ | $(3,6)$ |  |
|  | 4 | $(4,1)$ | $(4,2)$ | $(4,3)$ | $(4,4)$ | $(4,5)$ | $(4,6)$ |  |
|  | 5 | $(5,1)$ | $(5,2)$ | $(5,3)$ | $(5,4)$ | $(5,5)$ | $(5,6)$ |  |
|  | 6 | $(6,1)$ | $(6,2)$ | $(6,3)$ | $(6,4)$ | $(6,5)$ | $(6,6)$ | $\square$ |

Nov 5-7:48 AM


Nov 5-7:48 AM


Feb 19-7:51 AM

## One-Part Tasks <br> The results for simple, one-part tasks can often be listed easily. For the task of tossing a fair coin, the list is heads or tails, with two possible results. For the task of rolling a single fair die the list is $1,2,3,4,5,6$, with six possibilities.

Nov 5-7:48 AM

$\qquad$
$\qquad$
$\qquad$

## Product Table(repetition is allowed)

Determine the number of two-digit numbers that can be written using the digits from the set $\{2,4,6\}$.
Solution
The task consists of two parts:

1. Choose a first digit
2. Choose a second digit

The results for a two-part task can be pictured in a product table.

Nov 5-7:48 AM

## Product Table(repetition is allowed)

|  |  | Second Digit |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  | 2 | 4 | 6 |  |
| First <br> Digit | 2 | 22 | 24 | 26 |
|  | 4 | 42 | 44 | 46 |
|  | 6 | 62 | 64 | 66 |

From the table we obtain the list of possible results:
$22,24,26,42,44,46,62,64,66$. $\qquad$
$\qquad$
$\qquad$
Nov 5-7:48 AM

## Product Table(repetition is not allowed)

EXAMPLE: Find the number of ways club $N$ can elect $\qquad$ a president and secretary.

$$
N=\{\text { Mike, Adam, Ted, Helen }\} \text { or in abbreviated }
$$ form $\quad N=\{M, A, T, H\}$ $\qquad$

$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$


Nov 5-7:48 AM
$\quad \begin{aligned} & N=\{\text { Mike, Adam, Ted, Helen }\} \text { or in abbreviated } \\ & \text { form } \quad N=\{M, A, T, H\}\end{aligned}$
Find the number of ways club $N$ can appoint a committee of two members.
Solution
Using the table on the previous slide, this time the order of the letters (people) in a pair makes no difference. So there are 6 possibilities: $M A, M T$, MH, AT, AH, TH.

Nov 5-7:48 AM



Nov 5-7:48 AM
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
Nov 5-7:48 AM
$\mathrm{N}=\{$ Alan, Bill, Cathy, David, Evelyn $\}$
$\mathrm{N}=\{\mathrm{A}, \mathrm{B}, \mathrm{C}, \mathrm{D}, \mathrm{E}\}$ How many ways can you A) select a president?
B) select a president and secretary?
C) select a 2 people to be on a committee?
mmi11_ppt_1101.notebook
March 05, 2014

$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Nov 5-8:26 AM

