**Rummy Up**

* **Please be careful with children handling the dice. Dice should never go in their mouth as they can be a choking hazard!**

| Black Dice | Addition |
| --- | --- |
| Red Dice | Subtraction |
| Green Dice | Multiplication |
| Purple Dice | Square & square root |
| White Die | Operators, + - x |
| White Numbers  “Basic” | On 8-sided dice will have the numbers 2-9 |
| Yellow Numbers  “Advanced” | On 8-sided dice will have the numbers 6-13 |

**Dice Legend**

**Type of Game:**  This game is a competitive game where the winner will need a mixture of luck and skill to win.

**Who Should Play:** All levels, from players just learning to add to players that have mastered this skill.

**Materials Needed:** All of the eight-sided dice. This includes 4 black, 4 green and 3 red dice.

**Skills Reinforced:**

* addition of numbers ranging from 2 to 13
* grouping dice by common numbers or runs
* use basic probability when deciding whether to continue rolling dice

**How to play**

* A player will roll all 11 dice on one side of the open MathPro box. Player looks for either grouping of three or more of the same number or three or more dice that make a “run” (where dice are in numerical succession, i.e. 4,5,6 or 10,11,12) and moves those dice to the other side of the open MathPro box. The dice that are moved over are “banked”.
* After “banking” all dice that can be moved over to the other side of the box, the player then decides whether they will either take the sum of the point values for dice that are “banked”. If they take the point value their turn is over, and they add up all of the dice and add it to their point total.
* If they chose to roll again, they must have a die or dice that they can move over to the “banked” side or their turn is over and they lose all of the points that they earned on that turn. It is ok for a player to rearrange the dice on the banked side if needed to add a die or dice to that side. An example would be if a player had a run of 7,8,9,10 banked and they rolled two 7’s, they can separate the 7 from the run to make a group of three 7’s and will still have a run of 8,9,10.
* If a player can “bank” all 11 dice in one turn, they have “hot dice” and they can continue their turn by rolling all of the dice and “banking” dice over to the other side. At any time if a player is unable to “bank” at least one die, they lose all of the points from that turn.
* The winner will be the first player to the predetermined point total (we suggest that a game be played to 400 points). Both players should get the same amount of turns.
* There are a couple of other features you can add to the rules to make the game even more exciting, or more stressful, depending on your perspective. The first feature would be simply that when one player completes their turn by deciding to take their “banked” points and not risk rolling anymore, the player whose turn is next may decide that they will take that risk and will start with the points that have been earned and will risk them all by rolling the remaining dice hoping that they will be able to add at least one die to the “banked” die. This feature allows a more adventurous (risk taking) player to take advantage of a more hesitant (risk resistant) players reluctance to “take a chance”. And, of course, when that second player decides to take their “banked” points, the player whose turn is next has the same option. This variety puts constant excitement (stress) on every decision, and also puts a premium on knowing what are the chances (%) of getting a roll that will work. Not for the faint of heart!
* Another way of playing that also adds excitement (stress) is to play a predetermined number of turns. For example, you might determine that each player will have four turns, and whoever has the highest total after everyone has had their fourth turn is the winner. Instead of allowing the following player to start with what the previous player left on the table as in the example above, in this version every player starts their turn with all 11 dice available, but the excitement comes from knowing that each player is going to be required on at least one of their turns to continue rolling until they have either played all 11 dice (got hot dice) or been unsuccessful trying. Occasionally rolling all 11 dice is not difficult, but typically it is, so players will need to decide if they should try to roll all 11 (get hot dice) early in the game or wait for later when they might get a better chance at using all 11 (hot dice).
* Finally, for those clamoring for excitement (stress addicts) you can play the game with both of these last two variations in place. Like everything in MathPro, you decide what works for you.