Transmutation

# Overview

Transmutation is a competitive or solitaire puzzle game in which players are Alchemists trying to deduce the alchemical recipe of the “Philosopher’s Stone”, the ultimate compound containing the essences of mind body and spirit, that grants eternal life, and can transmute lead into gold.

# Components

* 1x Game sheet per player
* 1x Screen per player
* 1x pencil and rubber (eraser) per player
* 1x Smartphone/laptop/computer/tablet with access to the web-app per player
* 5 to 10x standard d6 per player

# Setup

1. Give each player a Game sheet, 5 dice, a pencil and a rubber.
2. Each player should roll their 5 dice, and place them on the corresponding storage spaces in the inventory. If players roll any 6s, they can place these wherever they like. If it is your first game, simply reroll 6s until they are not a 6.
3. Each player should circle the “20” of the gold tracker.
4. Each player should use their smartphone, or (other device) to go to the link above. Put in the following numbers:
   1. As a group, pick a number between 0 and 9,999,999. All players should enter this number as the Game seed.
   2. The first player at the table should put in 1 as their player number the second should put in 2 and so on.
   3. Each player should put in a difficulty level, where 0 is the hardest and 5 is the easiest. It is recommended to use 4 for a first game.
   4. The webapp will give each player some starting information. Players should note this down on their player sheet in accordance with the Principles of Alchemy section.

# How to play

In one round of play there are two phases:

**Phase 1 - Gather ingredients:**

All Players can do the following actions as many or as few times as they like, all acting at the same time:

* 1. **Spend 1 gold to reroll as many of their dice as they want.**
     1. Erase your previous gold value and circle the amount left after spending gold.
     2. Re roll dice, and place each dice on the corresponding ingredient storage space. 6s can be placed on any ingredient.
  2. **Use [x] gold to buy [x] specific ingredients.** 
     1. Decide how many ingredients you want to buy and of what type.
     2. Erase your previous gold value and circle the amount left after spending gold.
     3. Add a mark in the inventory for each ingredient bought. You may not have more than 3 marks on any one inventory space.

**Phase 2 - Mix ingredients:**

All players mix ingredients as follows:

1. Decide which ingredients you want to mix. You must have the ingredients you wish to mix in your inventory, either as dice, or as a mark on the container.
2. Reduce your gold tracker by **3 Spend gold if you are mixing two ingredients, 2 gold if you are mixing three or 1 gold if you are mixing four, five or six ingredients**. Remove the ingredients from your inventory by either removing a dice from your game sheet, or by erasing a mark for each ingredient in the container.
3. Using the webapp, input the ingredients you want to mix, and click the “M” button. The webapp will inform you which reactions you have discovered.
4. If the recipe granted you any bonus ingredients, make marks in your inventory, take more dice or adjust your gold accordingly.
5. Record your findings in the table on your game sheet, according to the principles of alchemy section.

All players mix their recipe at the same time. After everyone has finished mixing, all players should declare one of the following:

1. If they mixed the philosopher’s stone, declare it to the group, then go straight to the End of Game phase.
2. If they did not mix the philosopher’s stone, declare the recipe they mixed to the group. Other players are free to note it down if they wish.

Players may go below zero gold when spending it for any action, but if the round ends, they have not successfully mixed the philosopher’s stone, and their gold is below zero, they have lost and are out of the game.

# End of Game

If a player has mixed the Philosopher’s Stone (according to the webapp), then they must declare it to the group. They immediately gain 5 gold. All other players may do the following two actions in succession

1. Use [x] gold to buy [x] specific ingredients.
2. Mix ingredients - Do not declare what is being mixed.

Any players who successfully mixed the philosopher’s stone immediately gain 3 gold.

Players should compare the gold they have left. The player with the most wins. In the event of a tie break, the tie is won firstly by the player who discovered the Philosopher’s Stone and triggered the end of game round. If neither player did this, then the player with the most ingredients wins. If this is a tie, then the players share the win.

# Principles of Alchemy

* In this game, players will be inputting an alchemical recipe into a webapp, and using the information returned to deduce the recipe of the philosopher’s stone.
* An alchemical recipe contains between 2 and 6 ingredients, consisting of
  + Nitre (b)
  + Aqua Fortis (a)
  + Quicksilver (q)
  + Lead (l)
  + Phosphor (p)

arranged in any sequence. An example recipe might be Quicksilver-Nitre-Aqua Fortis-Nitre, which would be abbreviated as “qana”.

* Each ingredient may react with the ingredients adjacent to it. For example, “qaan” has the following possible reactions:
  + q and a
  + a and a
  + a and n
* The same recipe may not be mixed twice by the same player.
* There are four possible ways a pair of ingredients can react – No Reaction, A weak Reaction, A strong Reaction and a Strong Exhaustible Reaction. When you input a recipe into the webapp, you will be told how many Weak, and Strong reactions occur, but you will not be told which specific reactions occurred – you must figure this out from carefully repeated observations and logical deduction.
  + **No Reaction** means they are inert. If they cause no reaction, then it doesn’t matter which way round they go.
  + **A Weak Reaction** means that if they were the other way round, you would get a strong reaction. If a pair of ingredients is identical (e.g. “aa”), then it cannot have a weak reaction because it is the same both ways around.
  + **A Strong Reaction** means you will get one of the following effects:
    - * "Gain 3 Nitre",
      * "Gain 3 Aqua Fortis",
      * "Gain 3 Quicksilver",
      * " Gain 3 Lead Metal",
      * " Gain 3 Phosphoric Salt",
      * "The Mixture has Essence of Mind",
      * "The Mixture has Essence of Body",
      * "The Mixture has Essence of Spirit"

These effects will always be present in any game, and each one will occur only once.

* + **An Exhaustible Strong Reaction** means you get one of the following effects the first time you trigger it, you will get one of the following effects.
    - * "Gain [x] Dice",
      * "Gain [x] Gold",
      * [Ingredient] has [x] horizontal strong reactions.
      * [Ingredient] has [x] vertical strong reactions.
      * The [Body/Mind/Spirit] can be found in the domain of [domain].
      * The domain of [domain] has [x] strong reactions.
      * The [B/M/S] requires [ingredient].

These effects may or may not be present in any one game, and they may occur multiple times (Although you will never be given the same information twice for a different reaction).

If you trigger an exhaustible reaction again, you will still be informed about it what happened, but will not get the additional resources.

* **The Philosopher’s Stone is made when all 3 essences are produced in a single mixture**. The goal is to mix a valid recipe for the philosopher’s stone, whilst spending as little gold as possible.

# Recording Results

|  |  |
| --- | --- |
| Here, the player has made a note of all the information they have been given. They have put a tick in all combinations where they have been told there is a strong reaction, and a “w” in all of the combinations that would be the other way around. They have also noted that “p” has 3 reactions vertically, and that the “B” reaction is somewhere in the domain of Jupiter and that Saturn has 3 reactions. |  |
| Here, the player was able to mix the recipe “allq”. This let them know that of the three possible reactions, one was weak, one gave nitre, and the other gave some information. They noted down the information about the number of nitre reactions. They put “w,n,I” (week, nitre, information) for the “al” and “lq” reactions as they don’t know which is which. They put “n,I” in the “ll” spot, as reactions with the same ingredient twice cannot be weak. |  |
| Here, the player was able to mix the recipe “nnll”. Because they know that one reaction from the previous “allq” gave nitre, and the only reaction that is the same here that could give nitre again is “ll”, they were able to cross out the “i” in “ll”, and therefore the “n” from “ln” and “al”. The remaining reactions must either produce the spirit, or no reaction. The player has put “s,x” in “nn” and “nl”, which means “ln” must be either no reaction or a weak reaction. |  |

# Solo play

If you are playing the game by yourself, the game plays the same as with multiple players, but with a different victory condition.

If playing solo, you:

* Lose the game if you end your turn with zero lor less gold
* Win the game if you mix the philosopher’s stone

The next time you play solo, try playing on a more difficult starting setting. If you can comfortably beat the game on the “0” starting hints setting, try playing with 15 gold instead of 20 to start.