

Rainbow stones

You begin with 1 stone of each of the seven colours Red, Orange, Yellow, Green, Blue, Indigo, and Violet.



You can perform the following spells as many times as you like:

Type 1: (Transmutation) Turn 1 stone of one colour into 2 stones of the next colour. That is, you can only transmute as follows:

- $\text{R} \rightarrow \text{O O}$ Turn 1 Red stone into 2 Orange stones.
- $\text{O} \rightarrow \text{Y Y}$ Turn 1 Orange stone into 2 Yellow stones.
- $\text{Y} \rightarrow \text{G G}$ Turn 1 Yellow stone into 2 Green stones.
- $\text{G} \rightarrow \text{B B}$ Turn 1 Green stone into 2 Blue stones.
- $\text{B} \rightarrow \text{I I}$ Turn 1 Blue stone into 2 Indigo stones.
- $\text{I} \rightarrow \text{V V}$ Turn 1 Indigo stone into 2 Violet stones.

Type 2: (Colour swap) Destroy 1 stone and swap the colour of all stones of the next two colours (even if there are no stones of one of those colours). That is, you can only colour swap as follows:

- $\text{R} \otimes, \text{O} \leftrightarrow \text{Y}$ Destroy 1 Red stone, swap the colours of Orange and Yellow stones.
- $\text{O} \otimes, \text{Y} \leftrightarrow \text{G}$ Destroy 1 Orange stone, swap the colours of Yellow and Green stones.
- $\text{Y} \otimes, \text{G} \leftrightarrow \text{B}$ Destroy 1 Yellow stone, swap the colours of Green and Blue stones.
- $\text{G} \otimes, \text{B} \leftrightarrow \text{I}$ Destroy 1 Green stone, swap the colours of Blue and Indigo stones.
- $\text{B} \otimes, \text{I} \leftrightarrow \text{V}$ Destroy 1 Blue stone, swap the colours of Indigo and Violet stones.

Example: Suppose you have 2 Red, 3 Yellow, 1 Green, 2 Blue, and 3 Violet stones.

- (1) Using a type 1 spell on a Blue stone, you now have 2 Red, 3 Yellow, 1 Green, 1 Blue, 2 Indigo, and 3 Violet stones.
- (2) Using a type 2 spell on a Blue stone, you now have 2 Red, 3 Yellow, 1 Green, 3 Indigo, and 2 Violet stones.
- (3) Using a type 2 spell on a Red stone, you now have 1 Red, 3 Orange, 1 Green, 3 Indigo, and 2 Violet stones. (Notice since you started with 0 Orange stones, you now have 0 Yellow stones.)

Your goal: Have as many Violet stones as possible.