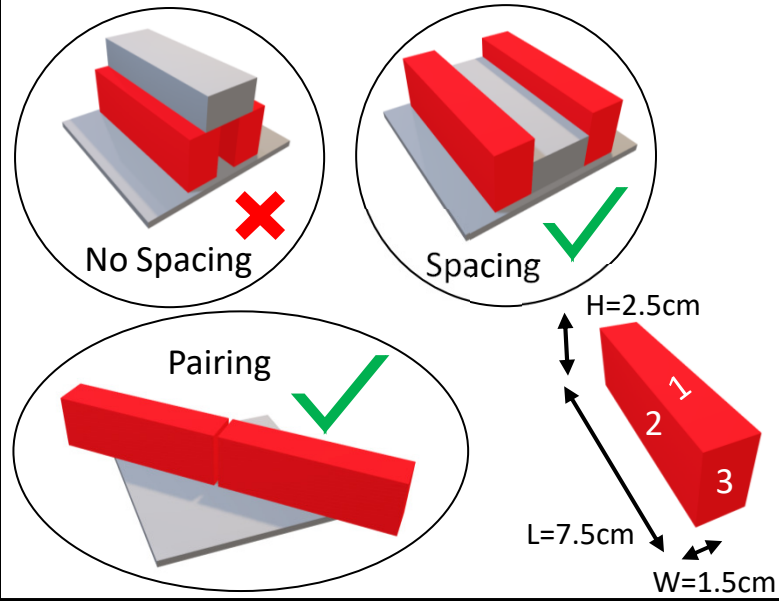


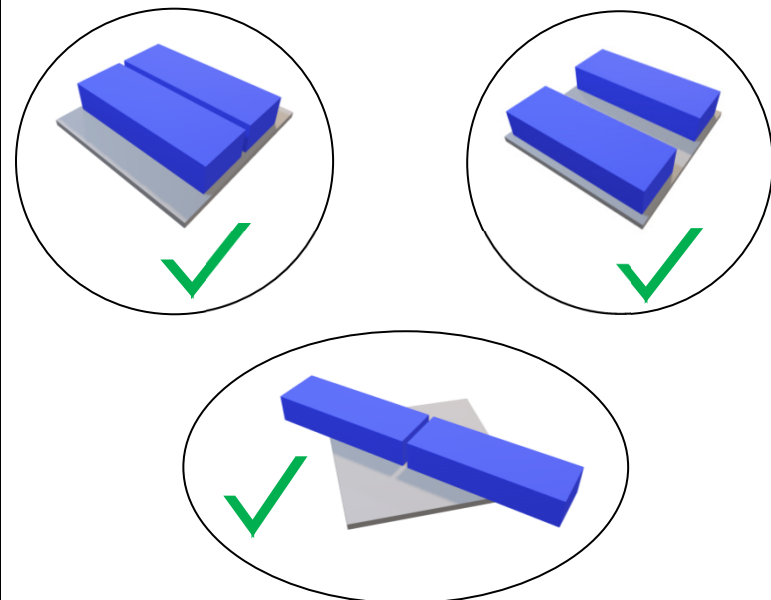
Rule 1

Protons must be on side 1 and spaced 2.5cm apart EXCEPT at their ends where they can pair



Rule 2

Neutrons can be in any orientation on side 2



1) Protons are on side 1, parallel, spaced 2cm unless paired

4) Build protons or neutrons on top of starting proton(s). Structure must be free-standing

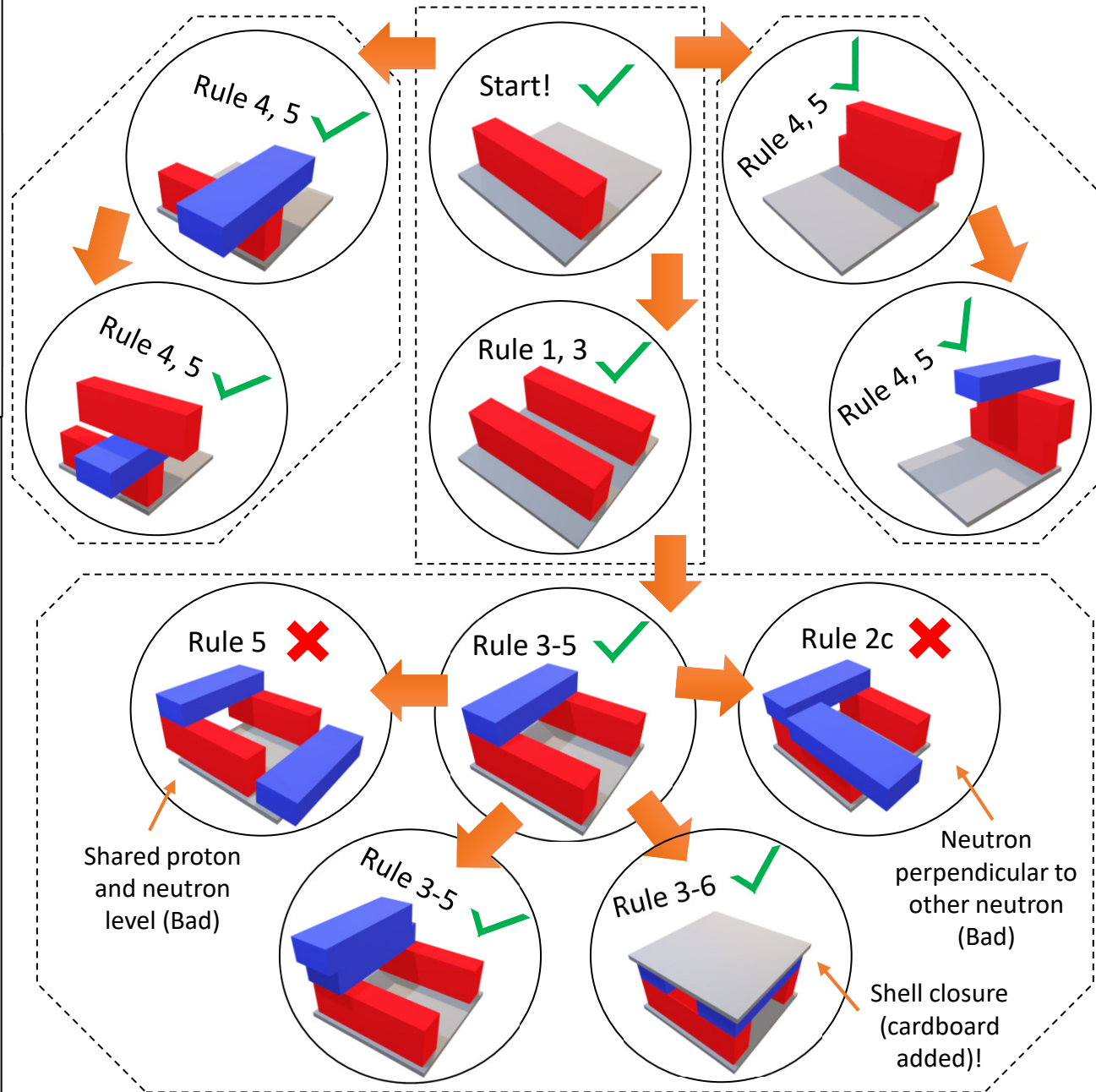
2) Neutrons are on side 2, perpendicular to protons, and can touch

5) Levels only contain one nucleon type (protons or neutrons)

3) Protons start on starting platform

6) Magic number pieces added when 2, 8, 20, and 28 are reached for one nucleon type

Example of rules 1-6 and



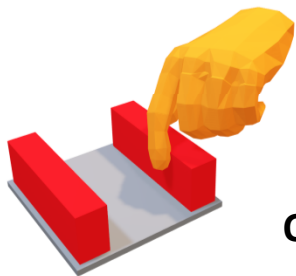
Extra Rules

1. Using one hand only, players may:

Add a nucleon

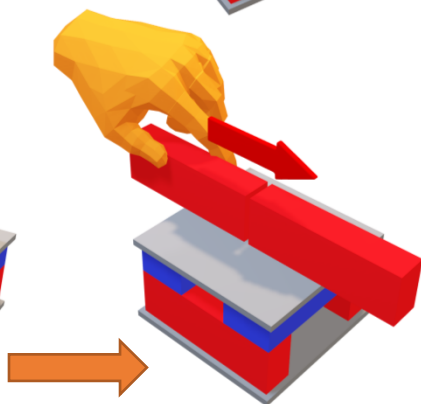
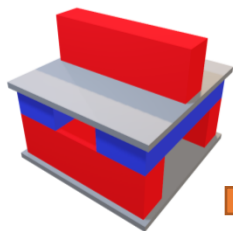
OR

Excite an existing nucleon

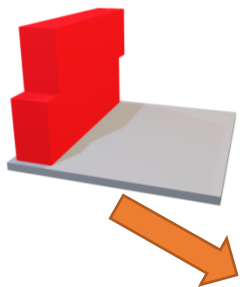


OR

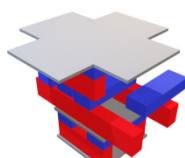
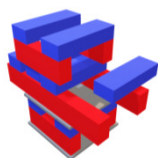
Pair a nucleon by sliding it



2. Nucleons cannot be de-excited



3. Once the minimum number of protons and neutrons have been added, a player may add a Magic Number board

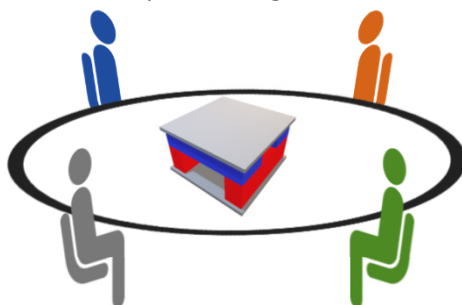


Example: 8 protons and 8 neutrons

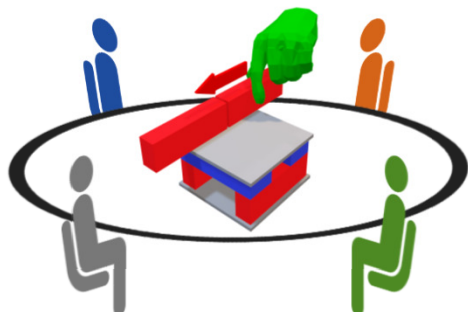
Example game

i. All players have placed 1 block down making ^4He .

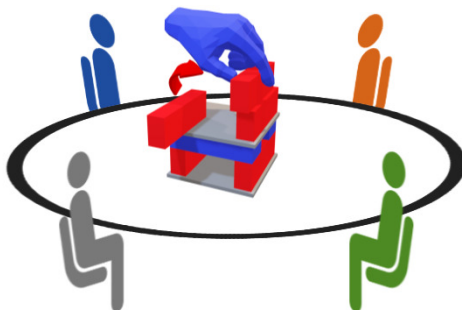
Blue placed magic number



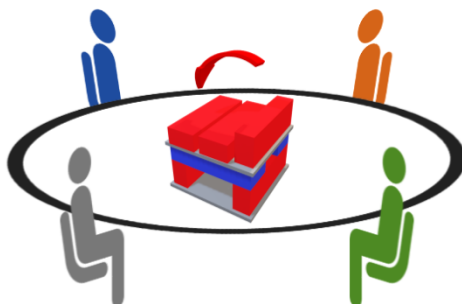
iii. Green pairs proton on ^5Li making ^6Be



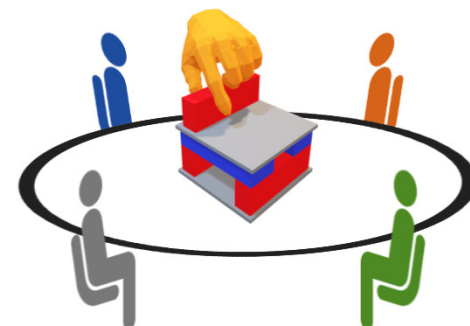
v. Blue excites proton on ^7B



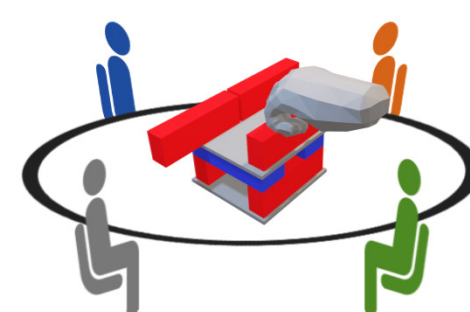
vii. Nucleus decays after Orange plays!



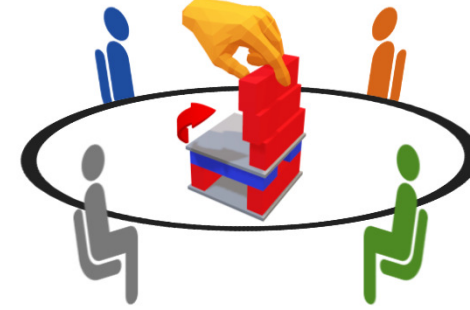
ii. Orange places proton on closed ^4He



iv. Grey adds proton on ^6Be making ^7B



vi. Orange excites proton on ^7B



Scoring:

Point Values for decay types:

- Nucleon emission (N): +1 point
- β or γ -decay (β , γ): +2 points
- Magic Numbers (M): +1 point per board on nucleus

Add all points from decayed nucleons and any magic numbers in play. Total goes to the player who played the last stable move. GOAL: First to 25 wins!

Ex: It decayed on Orange's turn, so Blue will get the points. We have two protons which fell onto their sides, β -decaying into two neutrons. Blue gets $2(\beta)+2(\beta)+1(M)=5$ points!