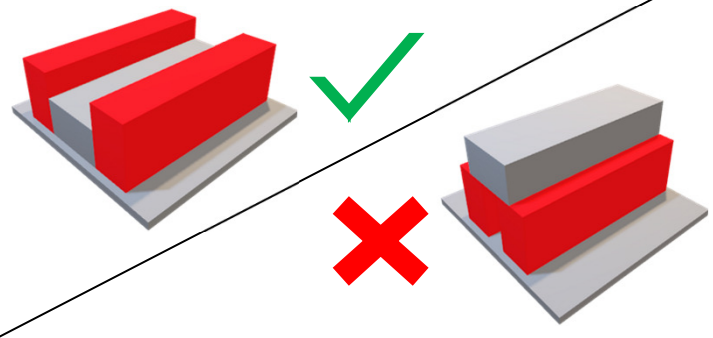
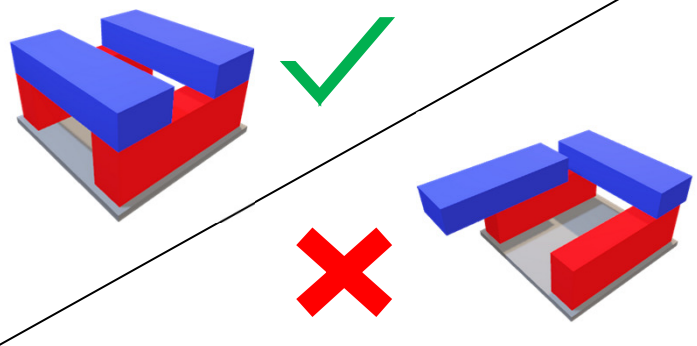
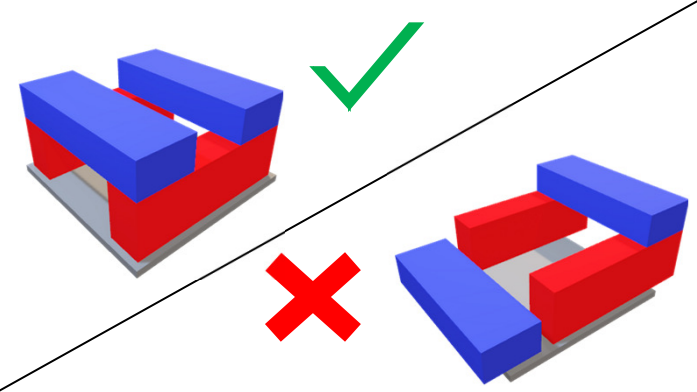
1. Protons (Red) go down first, must be pointed the same direction, placed up on their sides, AND be spaced 1 block width apart.



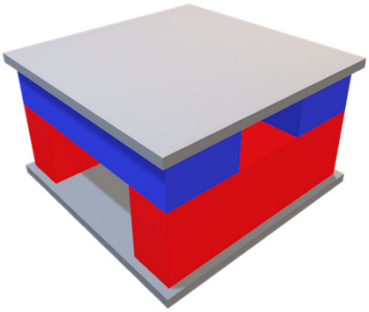
2. Neutrons (blue) can go next! They must point the other direction from protons.



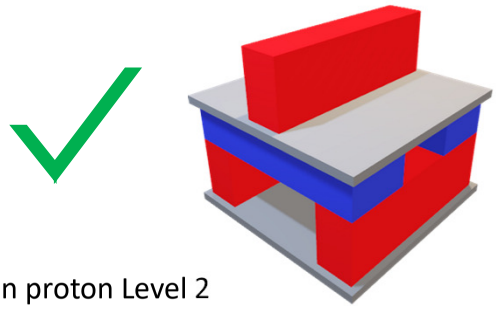
3. Each level must be separate from other levels for protons and neutrons



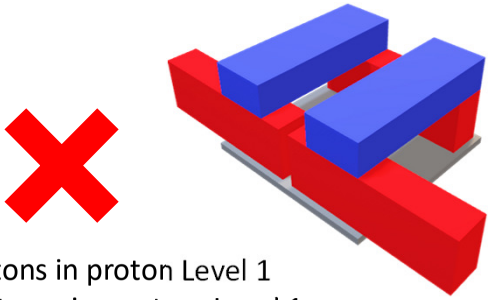
4. If you've hit a magic number, you get a piece of cardboard!



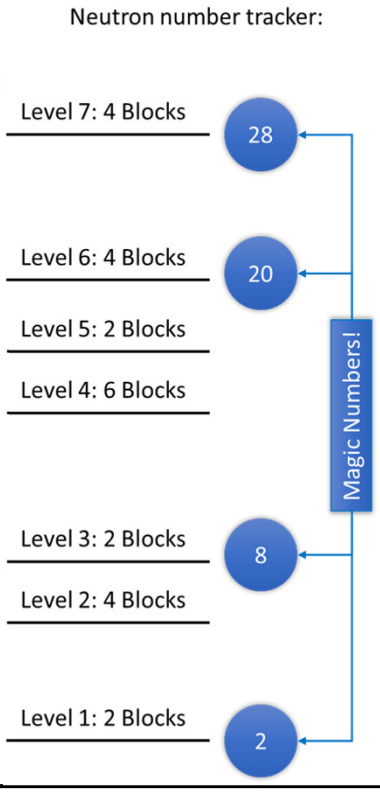
5. (Optional) Each level has a maximum number of blocks allowed; you cannot place more than is listed for each level. Levels don't need to go in order on the diagram, but magic numbers might change!

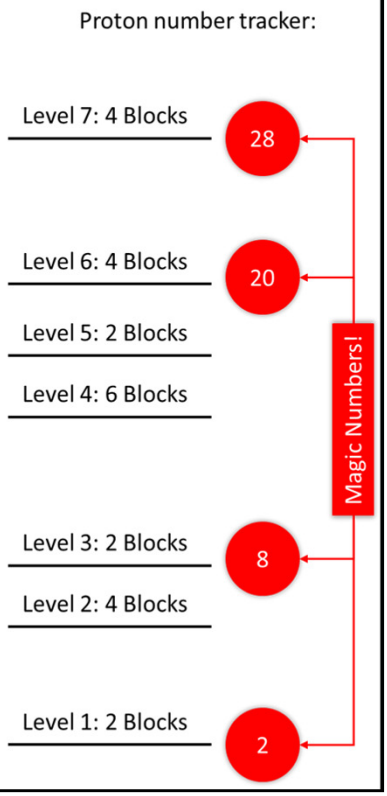


1 proton in proton Level 2
2 protons in proton Level 1
2 neutrons in neutron Level 1



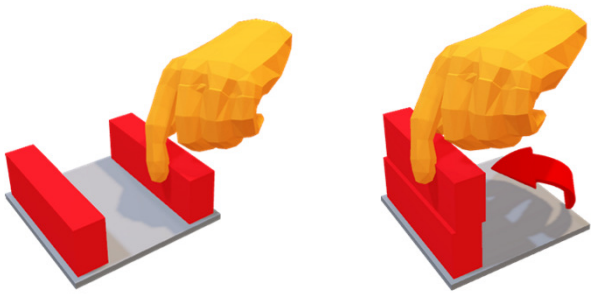
3 protons in proton Level 1
2 neutrons in neutron Level 1



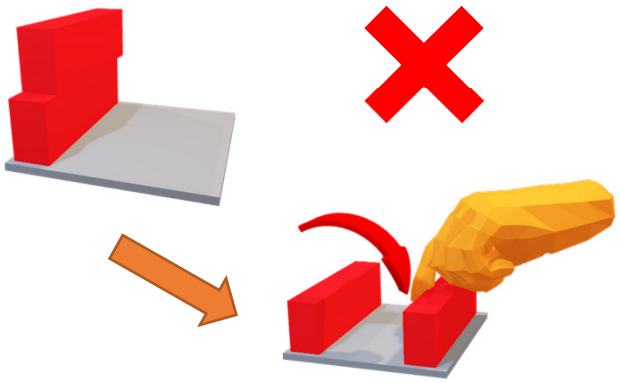


1. Using one hand only, players may:

Add a nucleon **OR** Excite an existing nucleon

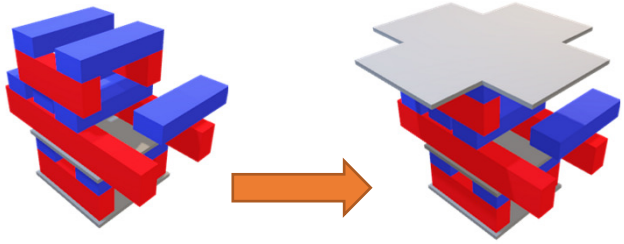


2. Nucleons cannot be de-excited



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



Scoring:

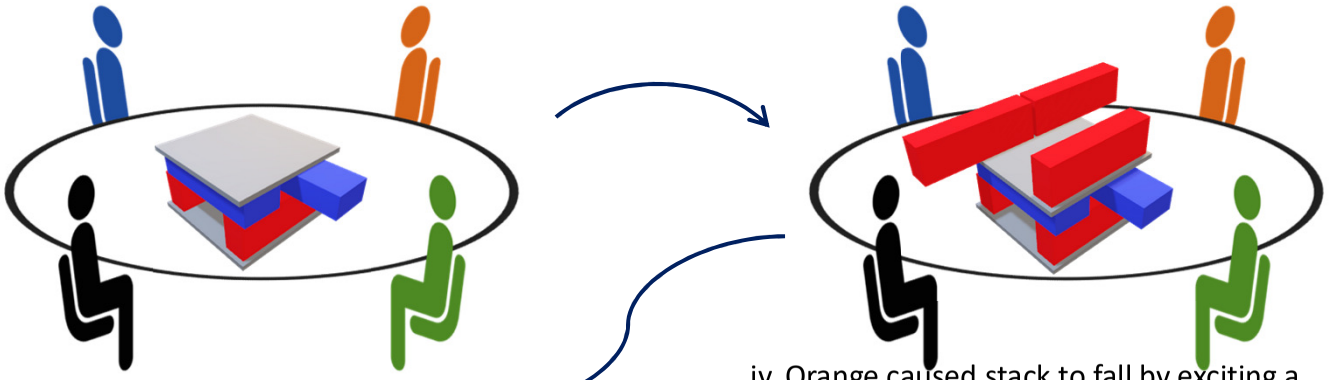
Point Values:

- Nucleon emission = 1 point
- β or γ-decay = 2 points
- Magic Numbers = +1 point per board on nucleus

When the nucleus decays, all points from that round go to the player who played the last stable move

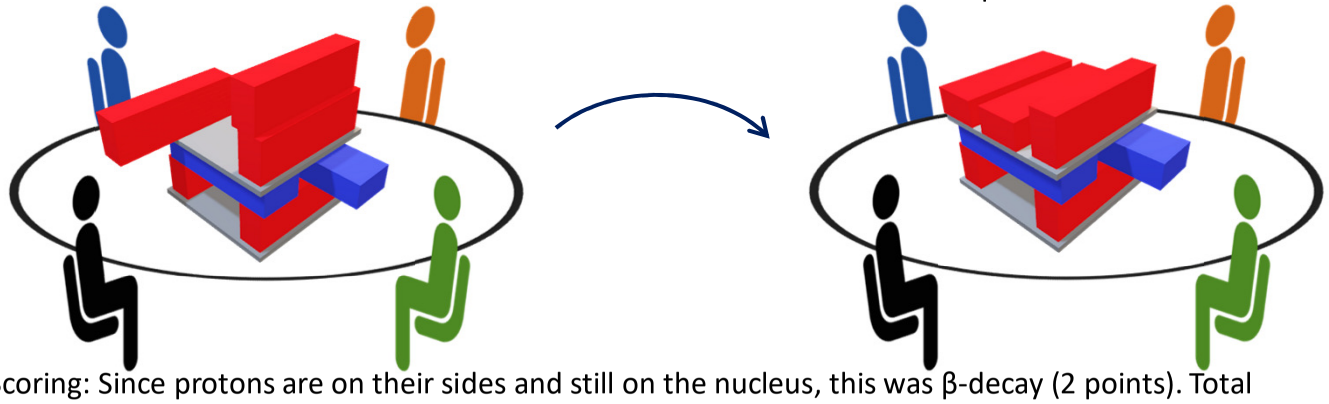
i. All players have placed 1 block down making ^{4}He. Blue placed magic number

ii. Orange, Green, & Black place protons on top of closed ^{4}He



iii. Blue excites a proton

iv. Orange caused stack to fall by exciting a proton



Scoring: Since protons are on their sides and still on the nucleus, this was β-decay (2 points). Total points: 2 (β-decay) + 1 Magic number = 3 points for Blue!