Magnetic Structures

*A solo magnetic building card game*

**Game Objective** Use magnetic rods and balls to construct a magnetic structure while following shape, component, and challenge constraints drawn from a deck of cards. The game is open-ended and encourages creative problem-solving!

**Setup** Shuffle all the cards and place them in separate decks:

 🟥 **Red** - Shape & Component Cards (What must be included)
 🟩 **Green** - Modifier Cards (How to modify your build)
 🟨 **Yellow** - Requirement Cards (Extra challenges)
 🟦 **Blue** - Draw Cards (How many new cards to take)

Start with 1 red card, 1 green card, and 1 yellow card to define your first challenge.
Draw 1 blue card to see how many new cards you must draw.

**Game Flow**

1. **Read your challenge:** Follow the rules of the red, green, and yellow cards.
2. **Build your structure:** Use magnetic pieces to complete the challenge.
3. **Check if it fits:** Does your creation meet all the requirements?
4. **Draw a new blue card:** This tells you how many new challenge cards to draw.
5. **Repeat** with new constraints to push your creativity further!

**Example Cards**

🟥 **Shape & Component Cards (Red)**

* “Include at least 3 hexagonal faces.”
* “Use at least 20 magnetic balls.”
* “Your build must contain a square-based section.”
* “All edges must be connected with rods of the same colour.”
* “Use rods of exactly three different lengths.”

🟩 **Modifier Cards (Green)**

* “Build using only one hand.”
* “You must finish the build in 5 minutes.”
* “Your structure must be at least 15 cm tall.”
* “Every side of the structure must have an even number of faces.”
* “Start building from the top and work your way down.”

🟨 **Requirement Cards (Yellow)**

* “The structure must balance on a single point.”
* “Your build must contain an internal hollow space.”
* “At least 20 rods must be positioned diagonally.”
* “Every face must be surrounded by different shapes.”
* “Your structure must be modular (able to be separated into two parts).”

🟦 **Draw Cards (Blue)**

* “Draw 1 red and 1 yellow card.”
* “Draw 2 cards and discard 1.”
* “Draw 3 new cards and combine their requirements.”
* “Swap a card from your hand with one from the deck.”
* “Choose 1 extra red or yellow card for a harder challenge.”

**Example Challenge** Let’s say you draw:

 🟥 **Red:** “Include at least 3 hexagonal faces.”
 🟩 **Green:** “Your structure must be at least 15 cm tall.”
 🟨 **Yellow:** “At least 20 rods must be positioned diagonally.”
 🟦 **Blue:** “Draw 2, keep 1.”

Your challenge: Build a magnetic structure that includes at least 3 hexagonal faces, is at least 15 cm tall, and has at least 20 rods positioned diagonally.

**Endless Possibilities!** You can document your builds by taking pictures.
 Try to increase difficulty by using more constraints.
 Challenge yourself to build different types of magnetic structures, exploring new creative possibilities!