The Beam

Objective:
To get the beam to hit as many discs as possible over the course of the game.

Components:
- 6 x 6 grid - row and columns labelled 1-6
- 12 discs - 3 red, 3 yellow, 3 green, 3 blue
- 24 sticks - 12 for mirrors, 12 for barriers
- 24 number cards

Set up:
- Remove six cards numbered 1-6 from the pack.
- Place three discs of one colour on each row as detailed below. Determine the positions of each disc by randomly drawing one of the six cards. The number on the card indicates the column to place the disc in.
  - 3 yellow discs on row 3
  - 3 blue discs on row 4
  - 3 green discs on row 5
  - 3 red discs on row 6
- Place a barrier on the grid line on the bottom edge of each square containing a disc.
- Replace the six cards, shuffle the whole deck and split the deck in half - forming two separate decks.

How to play:

There are 12 rounds to the game. On each turn, players each have a specific task - Task 1, Task 2, Task 3, and Task 4. The tasks are always performed in order - from 1 to 4. After each round, the players rotate to the next task. Each player will execute each task 3 times during the game.

Players may not talk!

Task 1: Turn over two cards
Turn over the top card of each deck - revealing two numbers.

Task 2: Allocate numbers
Choose which of the revealed numbers represents the *mirror*. Give this card to the player executing Task 3. The other number represents the beam. Give this card to the player executing Task 4.

Task 3: The mirror

Take a mirror action on the row that corresponds to the allocated numbered card. Choose one of the following *mirror* actions:

- **Place a new mirror** on one of the empty squares on the row. A mirror is placed diagonally across a square.
- **Rotate a mirror** on the row. Rotate through 90 degrees so that the mirror is on the other diagonal.
- **Remove a mirror** from the row completely.

Task 4: **The Beam**

Stand at the bottom of the grid by the column that corresponds to the allocated card. Now move into the grid - moving upwards along the column. You are taking the path of a beam of light.

- If you reach a **barrier** - the beam stops. Your journey ends.
- If you reach a **mirror** - bounce off it at 90 degrees - according to the angle of the reflection and continue the path of the beam.
- If you reach a **disc** - pick up the disc and continue in the same direction.
- If you reach the **edge** of the board - the beam stops. Your journey ends.

Place any discs you have collected in a scoring pile, well away from the grid.

After task 4, the round is complete. Players now rotate roles as detailed below and a new round begins.

- ❏ Task 1 → Task 2
- ❏ Task 2 → Task 3
- ❏ Task 3 → Task 4
- ❏ Task 4 → Task 1

End Game & Scoring

The game ends after 20 minutes or after the 12th round (when both decks of cards are empty), whichever is first.

The team calculates their score according to the number of discs they have removed from the board.
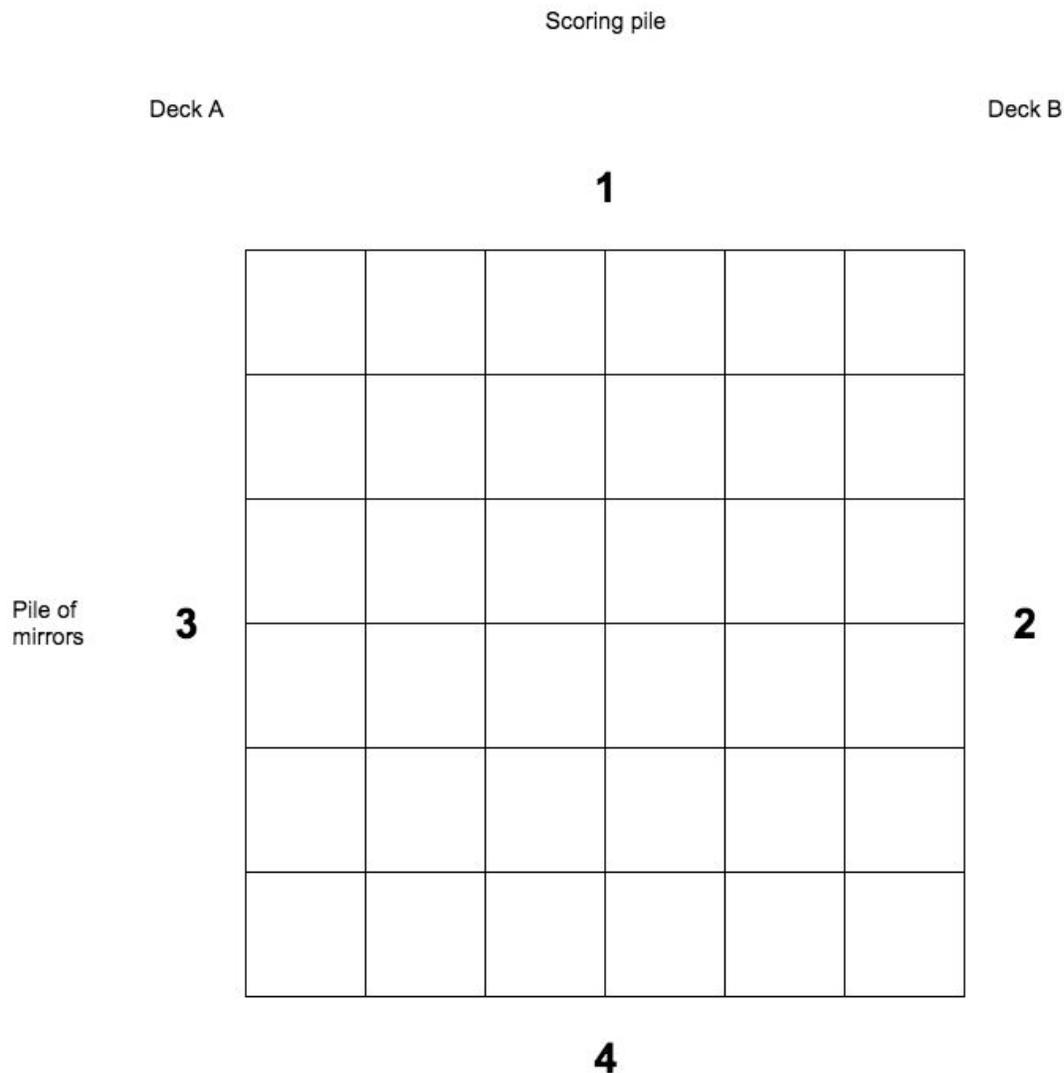
Yellow discs = 1 point
Blue discs = 2 points
Green discs = 3 points
Red discs = 4 points

Notes on Physical Movement

Each player should have a spot on the floor which they must start the round on as shown in the diagram.

Scoring pile

Deck A

Deck B

1

Pile of mirrors

3

2

4

Player doing **Task 1** - stands in **position 1**. The two decks of cards are to the far left and far right of the top of the grid, as shown, so this player must move from their starting position to the far left to collect one card and then the far right to collect the second card. They must then take the cards to the player standing in position 2. This player may now stay at Position 2 (ready for the next round).

Player doing **Task 2** - stands in **position 2**. This player first gives one card to the player in position 4, then gives the other card to the player in position 3. This player may now stay at Position 3 (ready for the next round).

Player doing **Task 3** - stands in **position 3**. The player takes a mirror action on the row indicated. The pile of mirrors is close to position 3. This player now moves to Position 4 (ready for the next round).

Player doing **Task 4** - stands in **position 4**. The player walks the path of the beam on the grid. Any discs that are collected are placed in the scoring pile behind position 1. This player now moves to Position 1 (ready for the next round).