



Khel
Gamification of education



KHEL 'The Gamification of Education'
a project by IDC in collaboration with
RSK (Rajya Shiksha Kendra) for government schools
of Madhya Pradesh, and
MHRD (Ministry of Human Resource Development)
focused on exploring and creating supplementary
material that is game based and interactive in order to
enhance the quality of learning in primary schools
across the state of Madhya Pradesh.

The project is ongoing, the initial phase of which was
completed over a
span of **one month**.
(8th May - 10th June'15).



The first phase of the project, which included basic ideation and production of games for trial, recruited around 20 students and practising designers from different design schools and workspaces in India.

Project contributors were all divided into a total of **8 groups**.

Every group was allotted a topic each, from the curriculum of **1st to 5th** standard, ranging from **Maths to Language Studies**.



‘KHEL’, apart from time slots utilised on creating games, featured a wide variety of **workshops, activities, interactions, presentations and field trips** to facilitate and promote a multidimensional approach to making engaging learning games.

Some of the most prominent events include :



Game design workshops

Workshop conducted by **Prof. Uday Athavankar** featured many interactive sessions and indoor and outdoor activities focused on helping students understand the **basics of game design**.

Workshops that were held towards the end, focused on **adapting the game designs for a tablet**, exploring numerous possibilities that come with a digital platform.



Field Trip

A fun outing to the Bhau Daji Lad Museum holding the exhibit '**Games People Play**' followed by exploring the **toy store Hamleys**' at Phoenix Mall.



Interactions

Presentation by **RSK team** on their own learnings and attempts at gamification of education from relevant curriculum, exposed students to a more precise and focused look at the **problem areas in learning** through gamification.



Interactions

Brainstorm sessions between **'Paper Boat' team** and the student groups on taking their game designs forward and translating them into **digital games**.



Interactions

Consistent interactive trial sessions with **kids of relevant age groups** were held at regular intervals, to ensure that the games were efficient at teaching the subject matter, while being sufficiently engaging.



The workshop-cum-project culminated in production of a set of games by each group, consisting of the final draft of a **Board Game** and a **Digital version** largely based on the board game.

Understanding Currency



Target group

Class 1st - 5th

Syllabus

Class 1

- Visual introduction of coins and notes (1 to 100).
- Understanding basics of the Indian Currency, and their segregation into coins and notes (From 1 to 10).
- Any amount of money is addition of other money. (10 Rs. = 5 + 2 + 2 + 1 Rs.).

Class 2

- Basic chunking in Coins. (Rupees : 1, 2, 5, 10 Rs. ; and, Paisa : 5, 10, 20, 25, 50, p)
- Basic chunking in Notes. (Rs. 1, 2, 5, 10, 20, 50, 100)
- Components of 1 Rupee.
- Understanding segregation of a rupee (Different combinations)

Objective

Design a game that would :

Make kids acquainted with Indian notes and coins currently in circulation + the outdated ones (through picture based activities.)

(PRE GAME - *Preliminary Activity*)



Make them understand the basic difference between coins and notes (Difference between the physical properties of notes and coins.)

(PRACTISE - *Board game 1 : Basic Level*)



Basic operations in value of money - Paisa and Rupees
(Addition and subtraction)

(POST GAME - *Board game 1 - Complex Levels*)

Process

1. Understanding the syllabus.
2. Analysing kids' understanding on the subject through their response on an outdoor activity (Basic version of Board Game)

Activity 1 (Outdoor / Indoor Activity)

3. Spotting problem areas.
4. Planning out a board game based on the previous activity.
5. Reviewing rules & adding new/modified fun elements to the game, based on kids' response.
6. Introducing theme based which improves the interest of the kids to play the game.

Board Game (Level 1)

First Draft
↓ ↑
Reviewed Version

7. Levelling the game up to include operations in bigger values and ability to recognise notes up to 100.

Board Game (Multiple levels)

→ **Digital Version**
(Multiple levels)
Modified for
digital platform

Preliminary activity



‘Chori Chori’

A basic board activity, introducing kids to the visual specifications of coins and notes, and the difference between the two, by focusing on their physical properties.

Elements



Game Board



Playing Pins



Dice

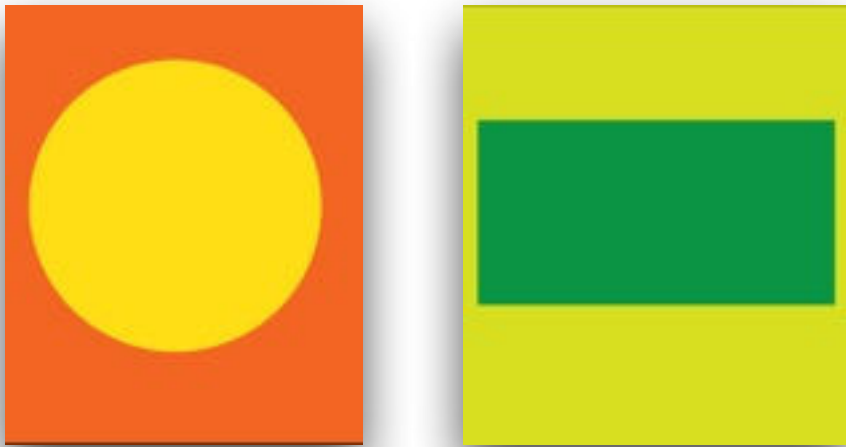


Note & Coin
tokens

Activity Board



Coins & Notes Blocks



Bonus Blocks



Penalty Blocks



Problem areas

- Kids had just a **basic idea of the concept of money**, but weren't well versed with details such as, the value of money, or the hierarchy of values in money.
- They also found it **hard to draw parallels between coins and notes**.
- **Adding, subtracting or segregating money** (generating change) was an unknown territory to the younger ones.

Key-points

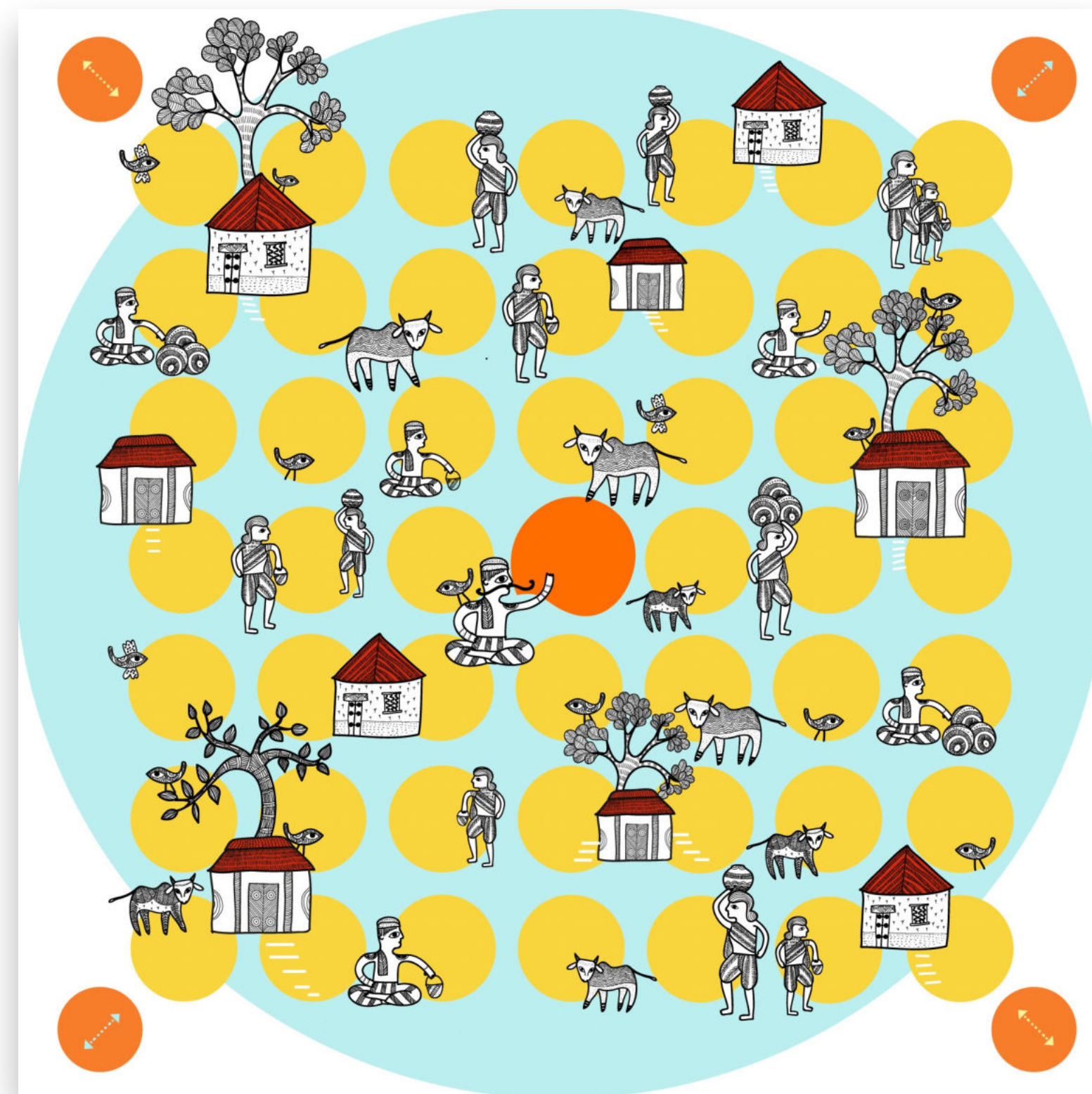
- The game had to be **simple to understand** as the target group had no prior knowledge of the functioning of money.
- The **difference as well as, similarity in the values of notes and coins** had to be emphasised upon.
- Basic **adding and subtracting of money** was to be included in the gameplay to understand basic operations on value of money.



Theme

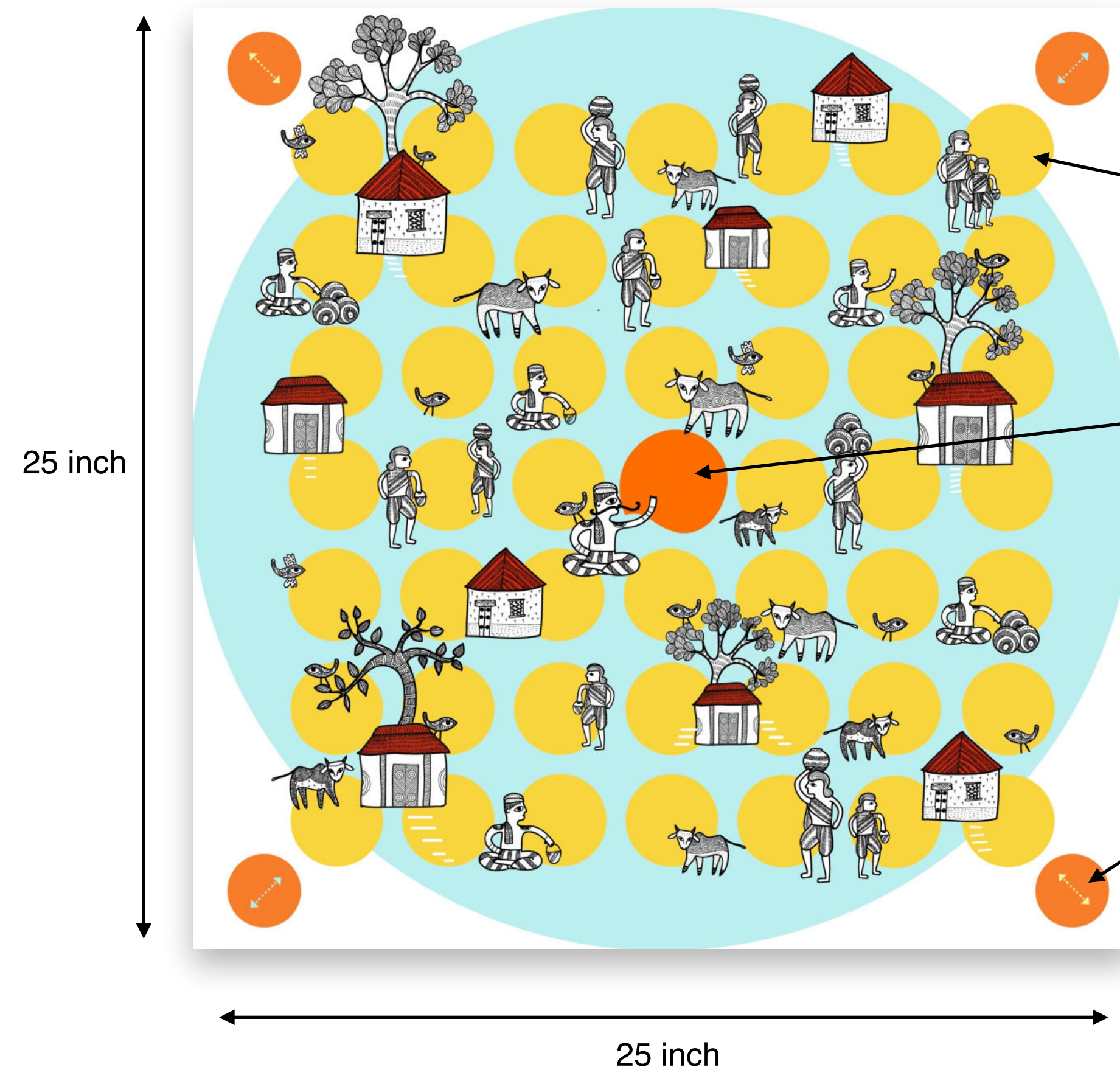
- The board represents a village and the circles represent houses in it. A vender sells different objects with different price value in the centre of the village. The players are supposed to land on different houses to help the people with their work and resultantly earn enough pocket money to buy the items on sale by the vendors.
- Considering the target audience that mostly belong to the villages in MP, 'Gond' Art style, the folk art widely practised in Madhya Pradesh, was chosen for execution,

Elements



Game Board

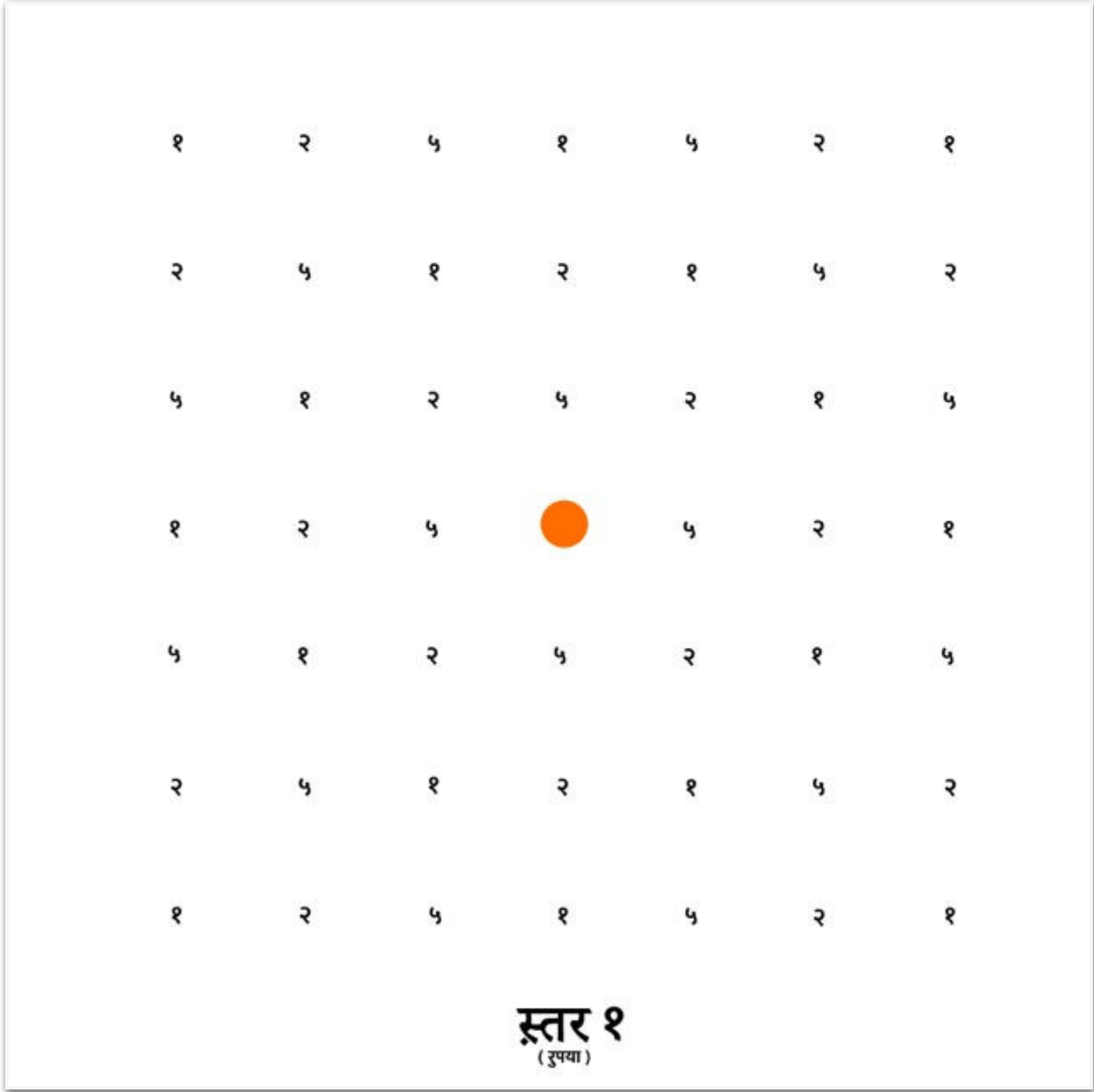
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Game Board

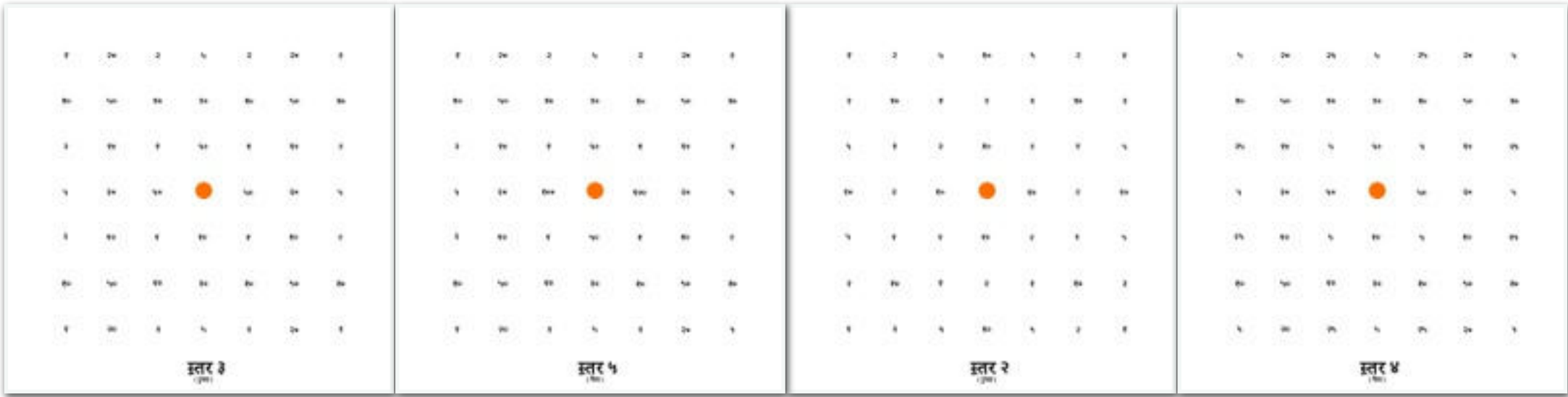
1. **Scoring Tiles** - These yellow tiles contain notes and coins of varying values that can be earned by the players upon landing on one.
2. **Vendor's Tiles** - The vendor's tiles contains items on sale which are to be bought by the player once any of the players accumulate enough money precisely equal to the value of the item on sale. Each time an item is bought by one of the player, another item is put up for sale on the vendor's tile. Each round allows the sale of maximum five items, until the money on the board is exhausted.
3. **Teleportation Tiles** - Any of these orange tiles enable the player to teleport to the other orange tile diagonally facing it in the other end, allowing players to cover the entire board with lesser efforts.

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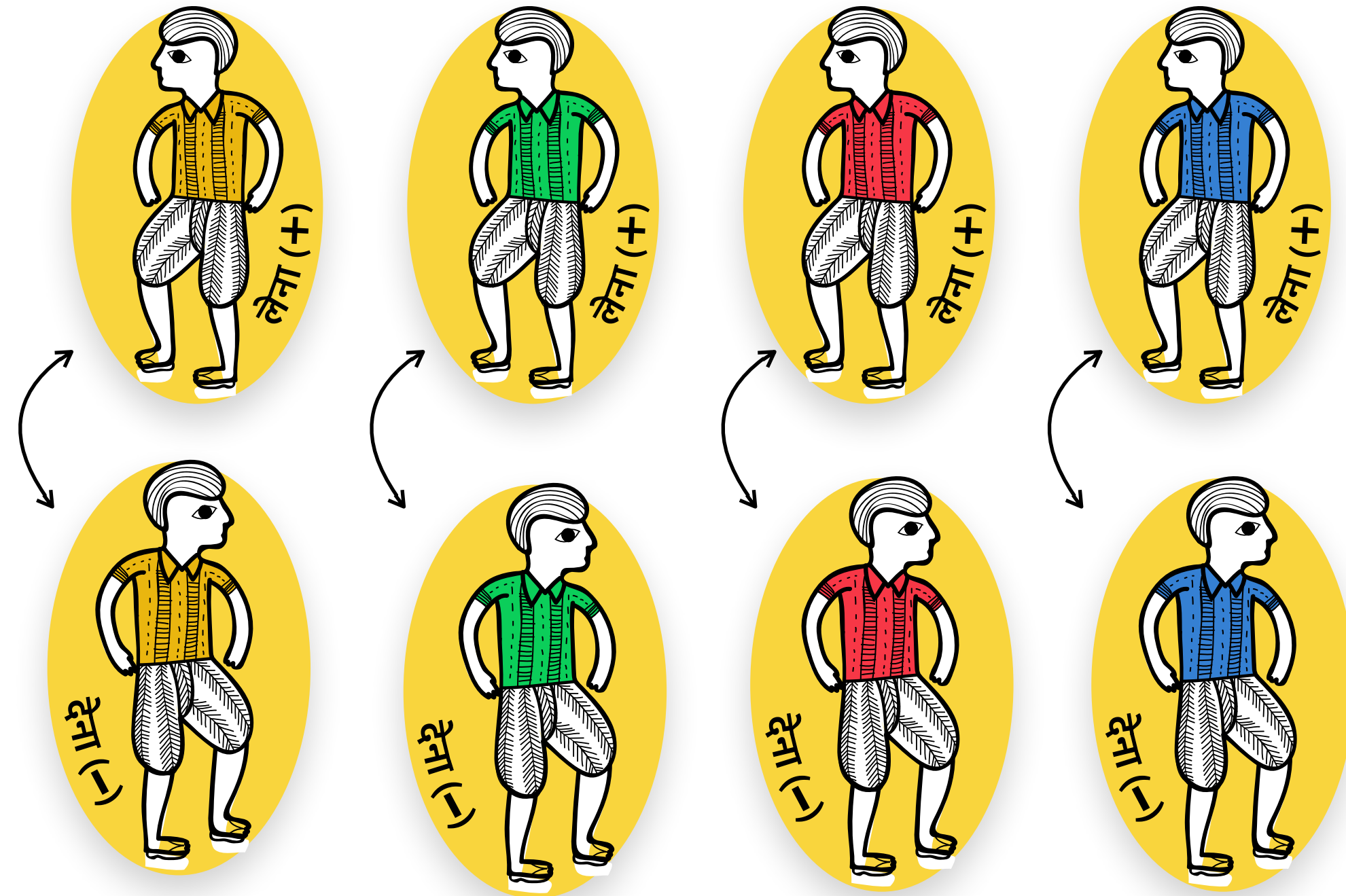


Level Sheets

These transparent sheets that are to be placed on top of the game board before starting the game, specify the value of money tokens that will be placed in each tile. Apart from specifying the values for addition, the sheet will also specify money values for subtraction as it will display the amount of money in each tile, once it has been taken away by any of the players.



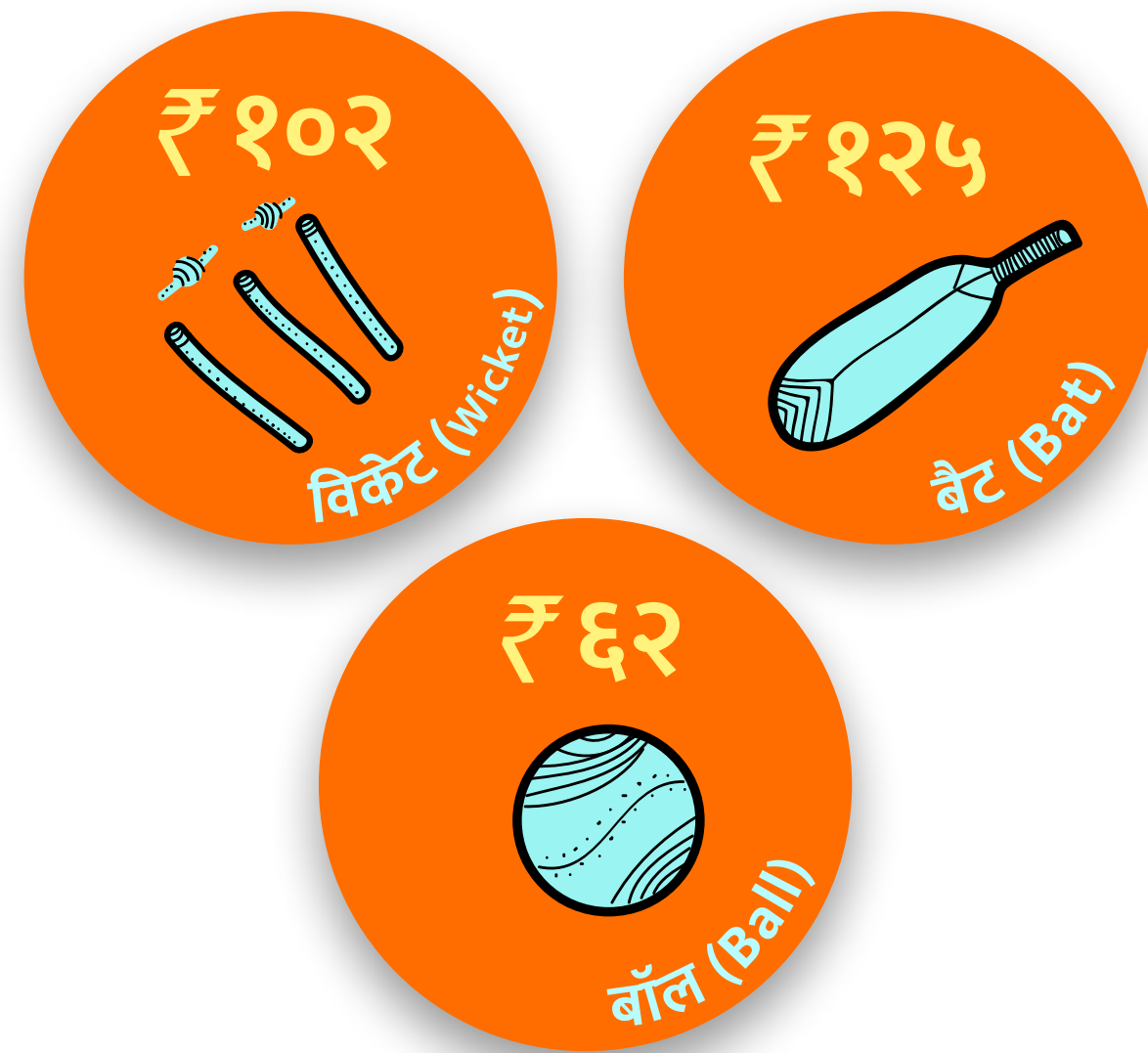
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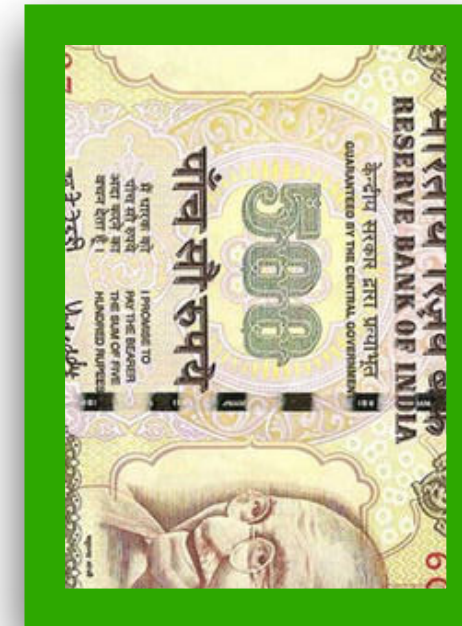
Players' Tokens

1. The game allows maximum four player to play against each other.
2. Each player is to be assigned one of these coloured tokens in the beginning of the game.
3. Each token has two faces, the upper face with the '+' is used for addition and the lower face with the '-' sign is used for subtraction of values.

Elements



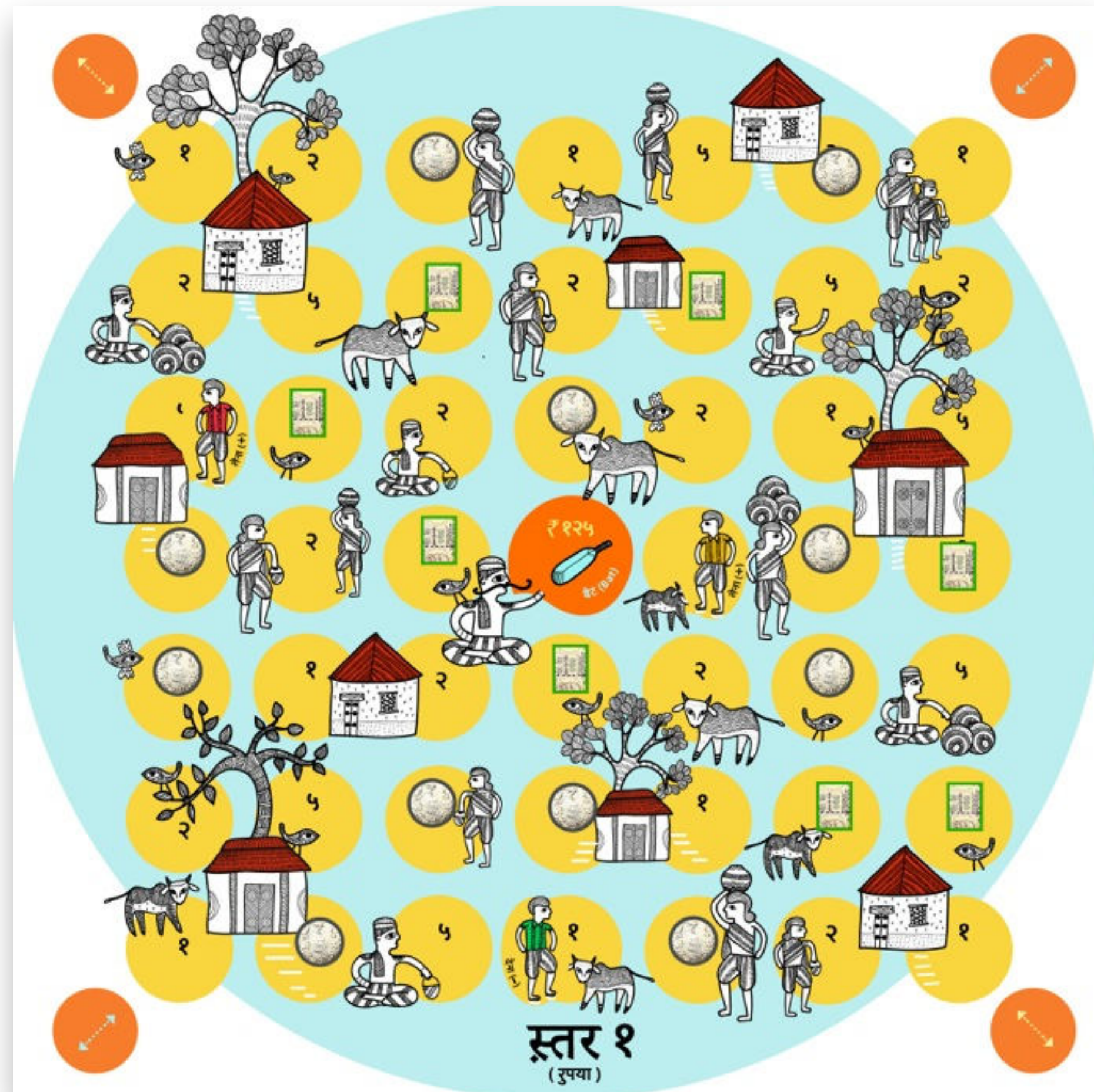
Vendor's token - Token that display the value of items on sale (To be placed in the vendor's tile in the center)



Money token - Token that the players are supposed to earn in order to buy any item on the vendor's token. (To be placed on the play yellow tiles)

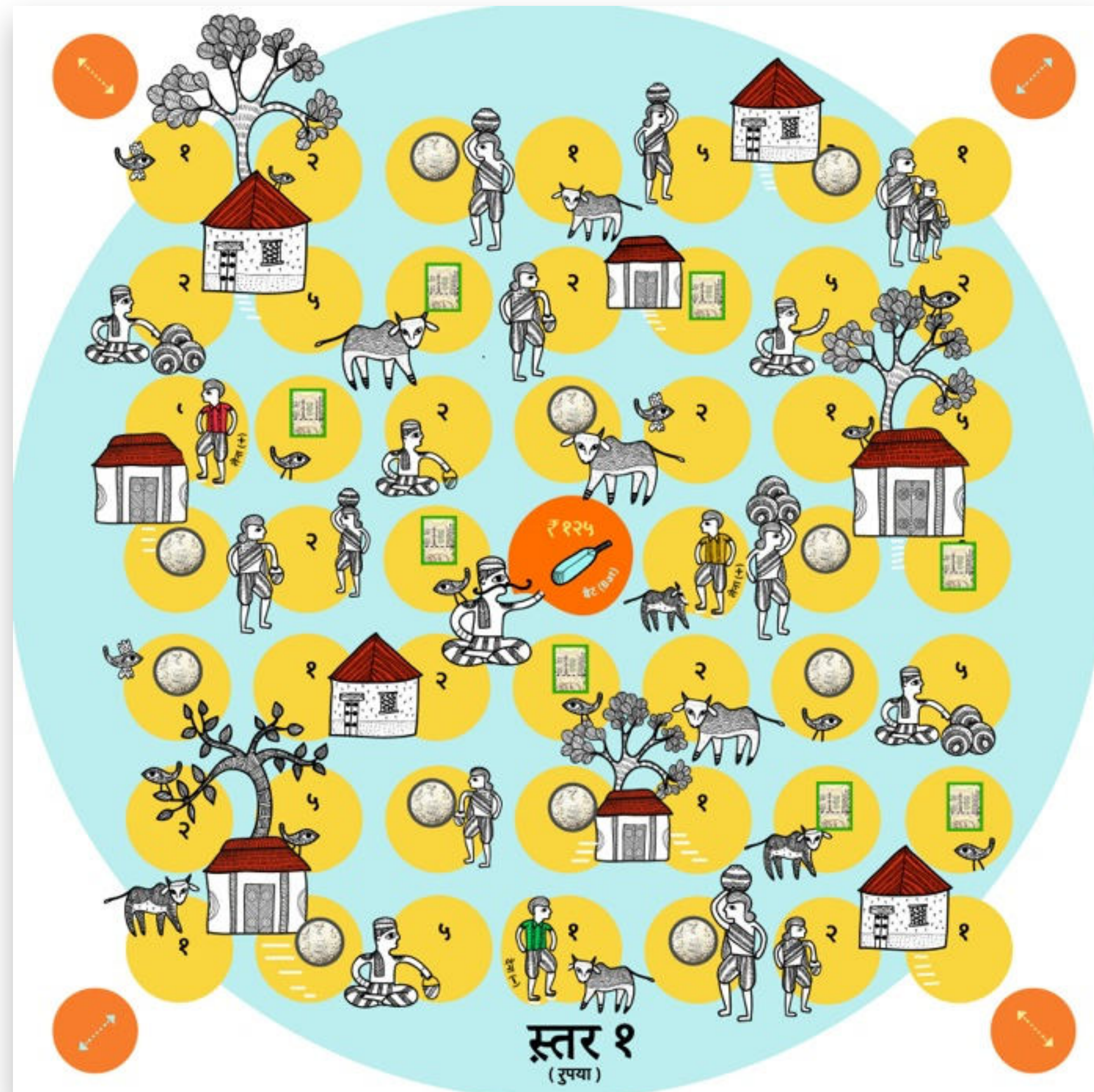
Dice

Gameplay



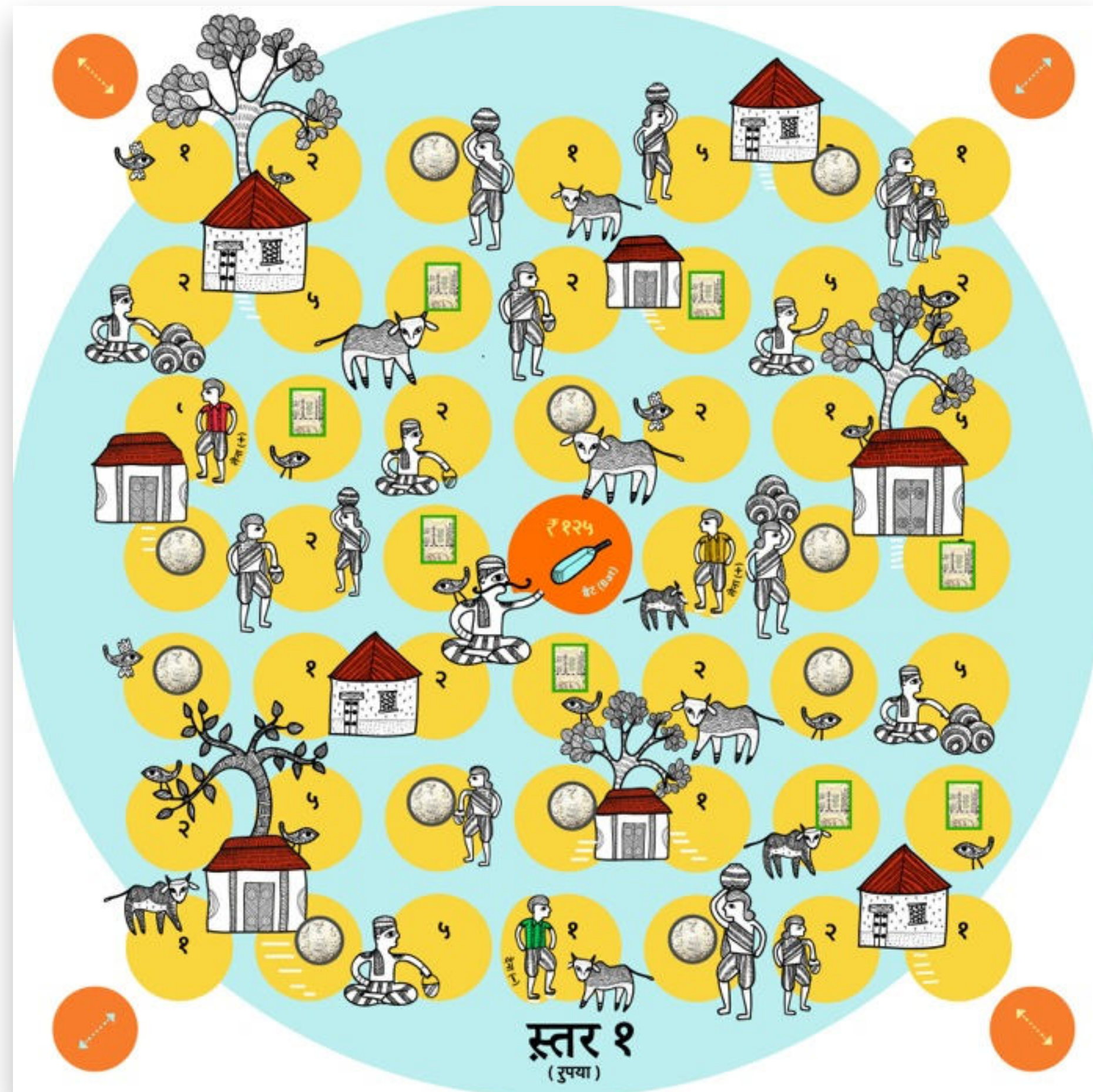
- Four players start the game from four corners of the board.
- An object with a price tag is placed on the board
- The first player rolls the dice to begin the game and according to the number on dice the player moves his color token that many steps on the board such that he is able to get more money. Wherever he keeps his token the player collects that amount of money (notes, coins, paisa) and keep it with themselves (like an account).
- The players can move only horizontally or vertically. Diagonal move is prohibited.
- The players have the choice to move either horizontally or vertically on the grids such that their move will fetch them more money.

Gameplay



- If one of the players land on the same grid as the other player who was previously standing on the grid, he can claim the money from the player who was on the grid earlier.
- When a player lands on one of the corners on the board, he has the choice to teleport to the corner which placed diagonally opposite on the board.
- If the players exceed the target value then they can subtract a certain amount from their account in order to achieve the target.
- The player who exceeds from the target has to try to land on the empty grid which was containing the amount that he wants to subtract from his account. He takes out that amount of money from his account and keeps on the empty grid.

Gameplay



- The player also has the option to exchange a bigger value with small denomination of same value.
- The player sitting diagonally to each other can make a team. So the two teams will play against each other.
- Two players of the same team can add whatever they earn and try to achieve the target value first.
- The team members won't claim money from each other when they lands on same grid.

Winning

- The player or team that is able to generate the money of the target value first wins the sale round.
- The player or team that is able to buy items of the most accumulated value, wins the game.

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Digital Iteration - The digital version of the board game is, more or less, based on the mechanics of the same game, along with a few modifications making it more suitable for a digital platform.
(7" inch tablet)

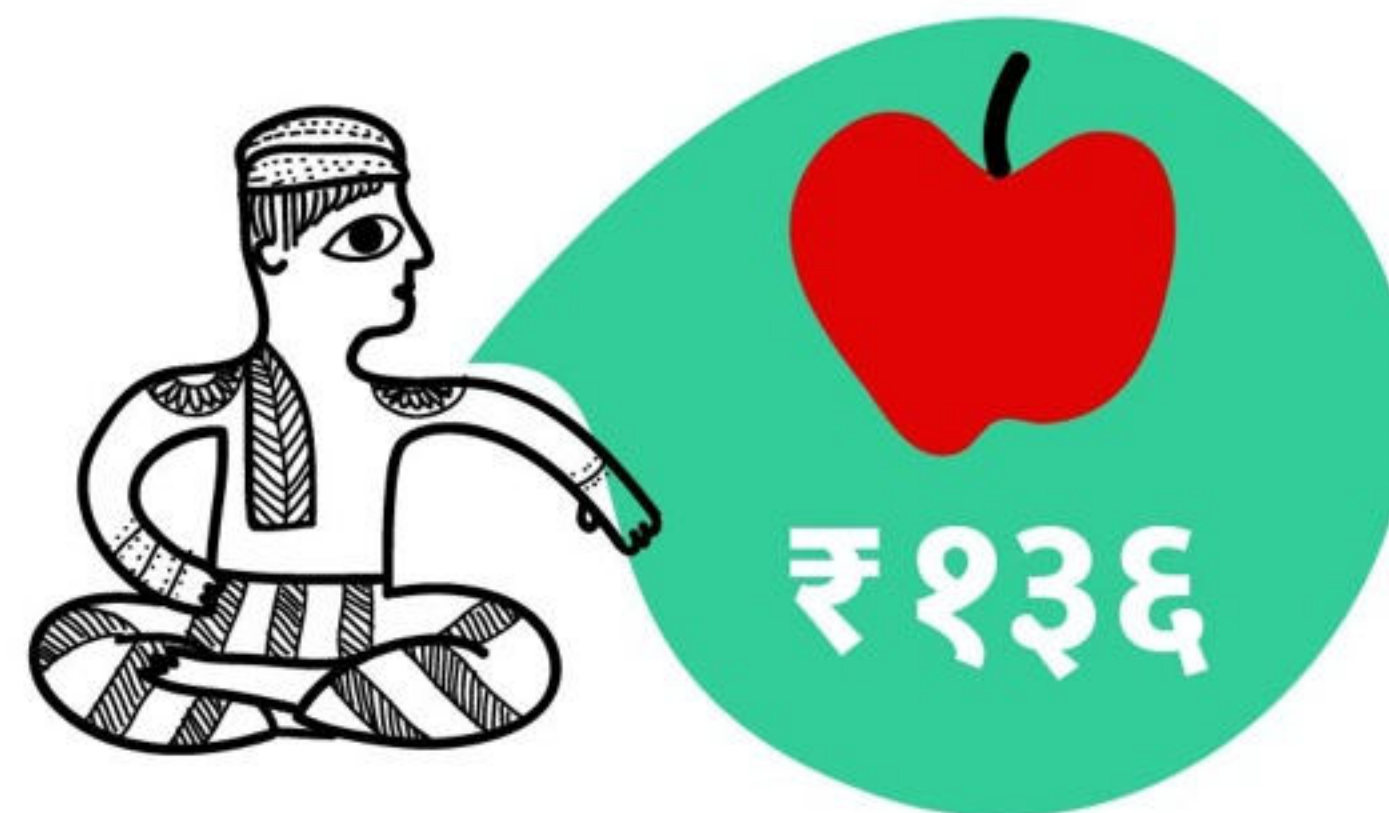
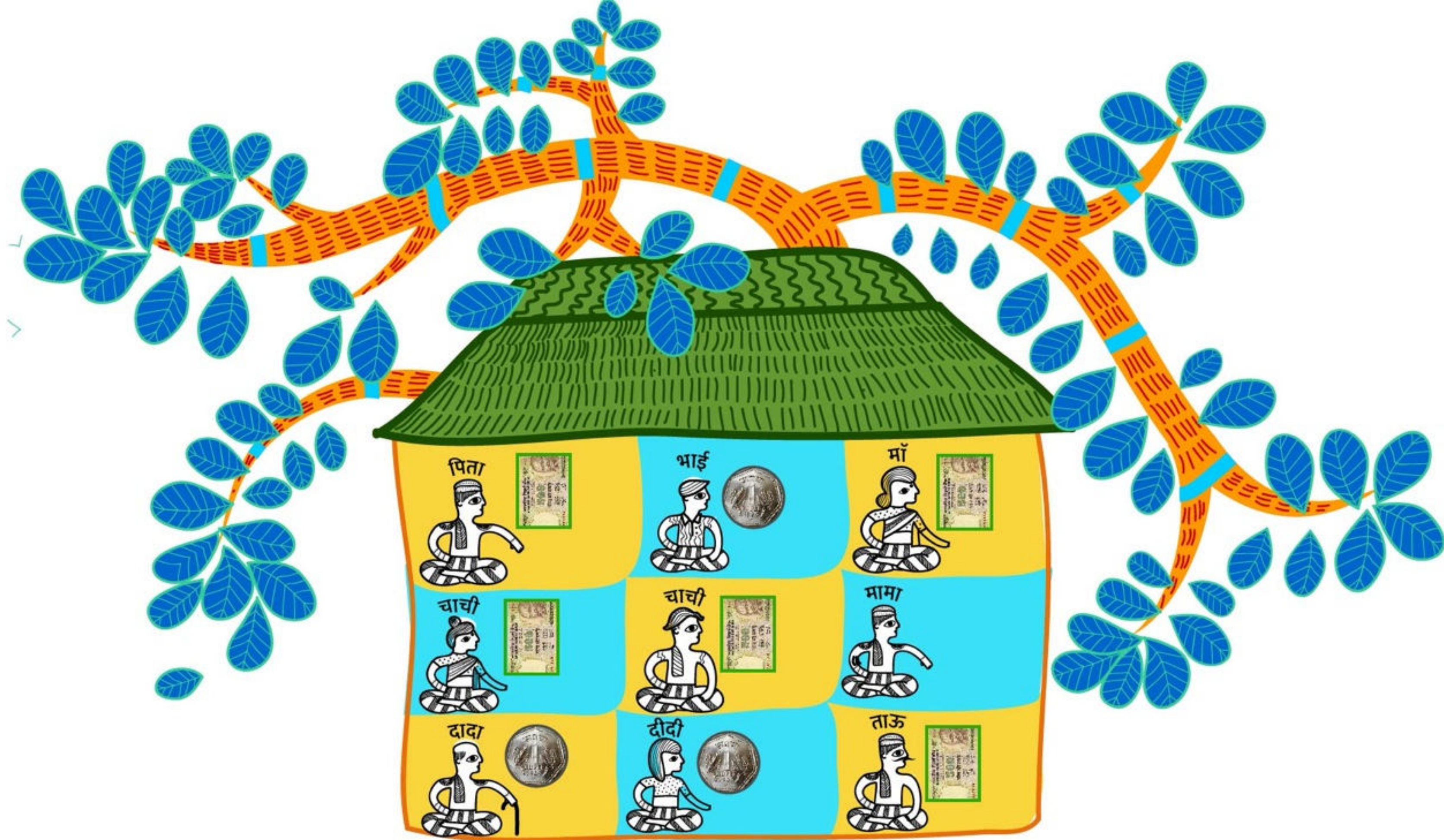


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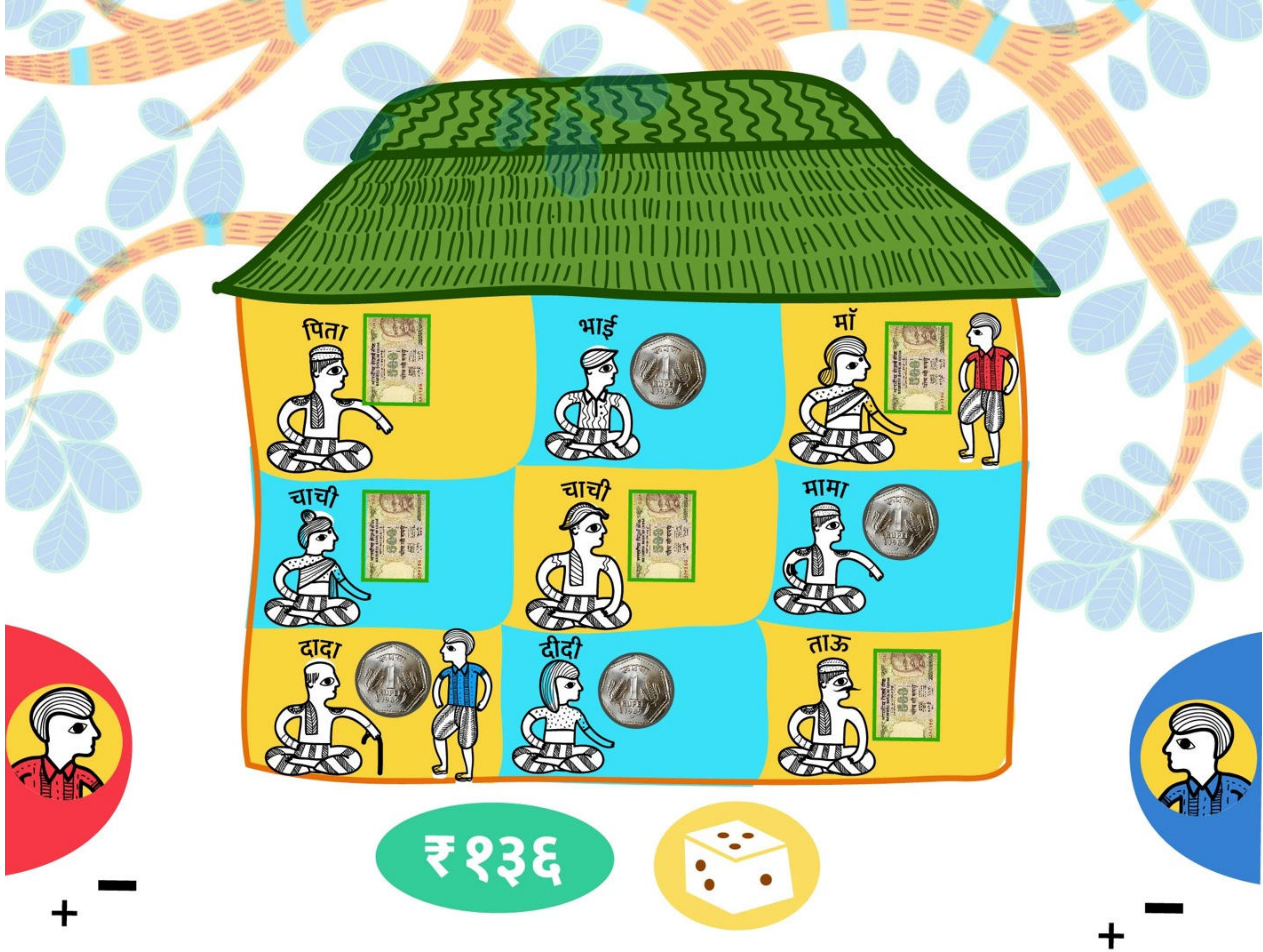
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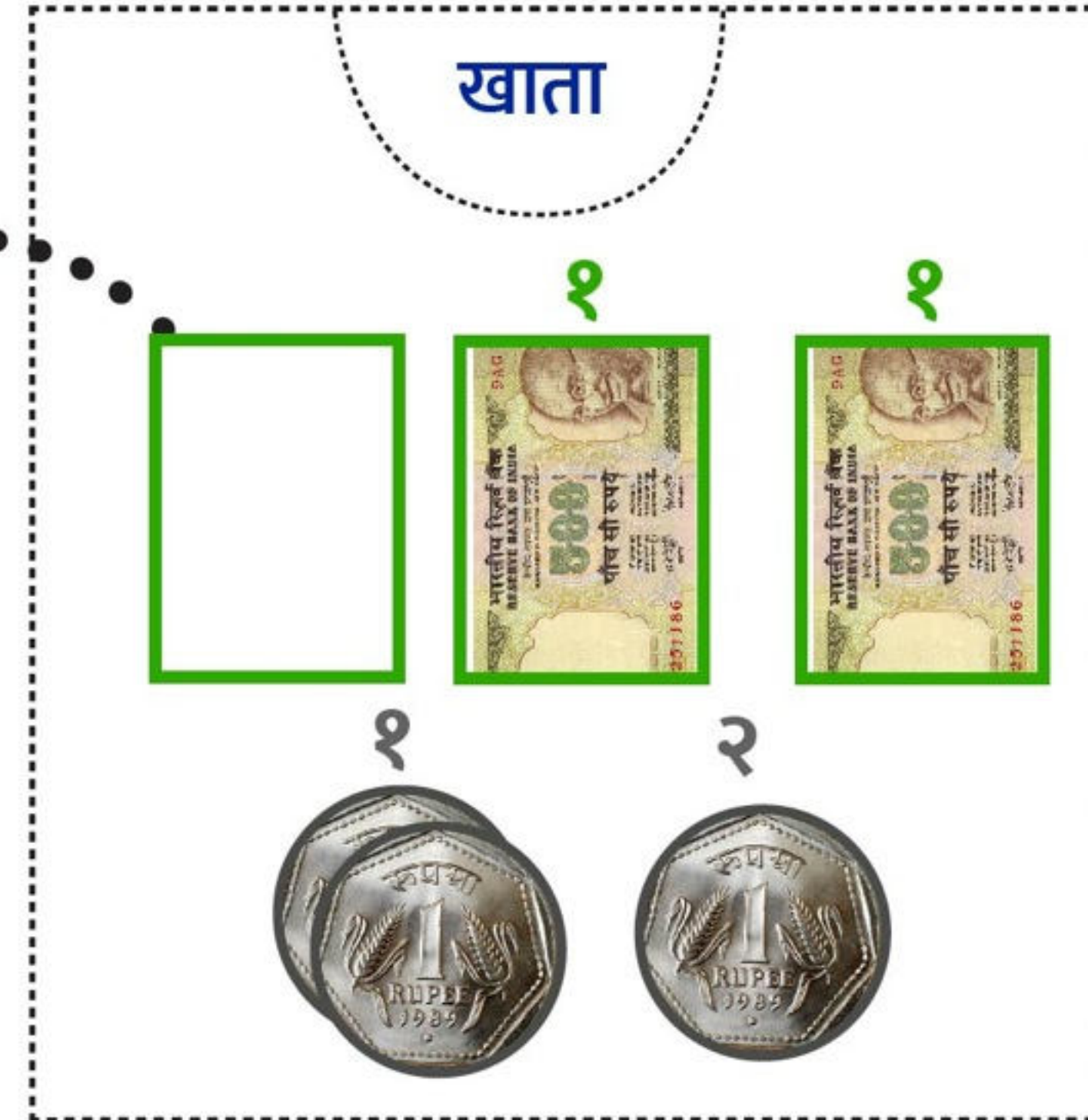
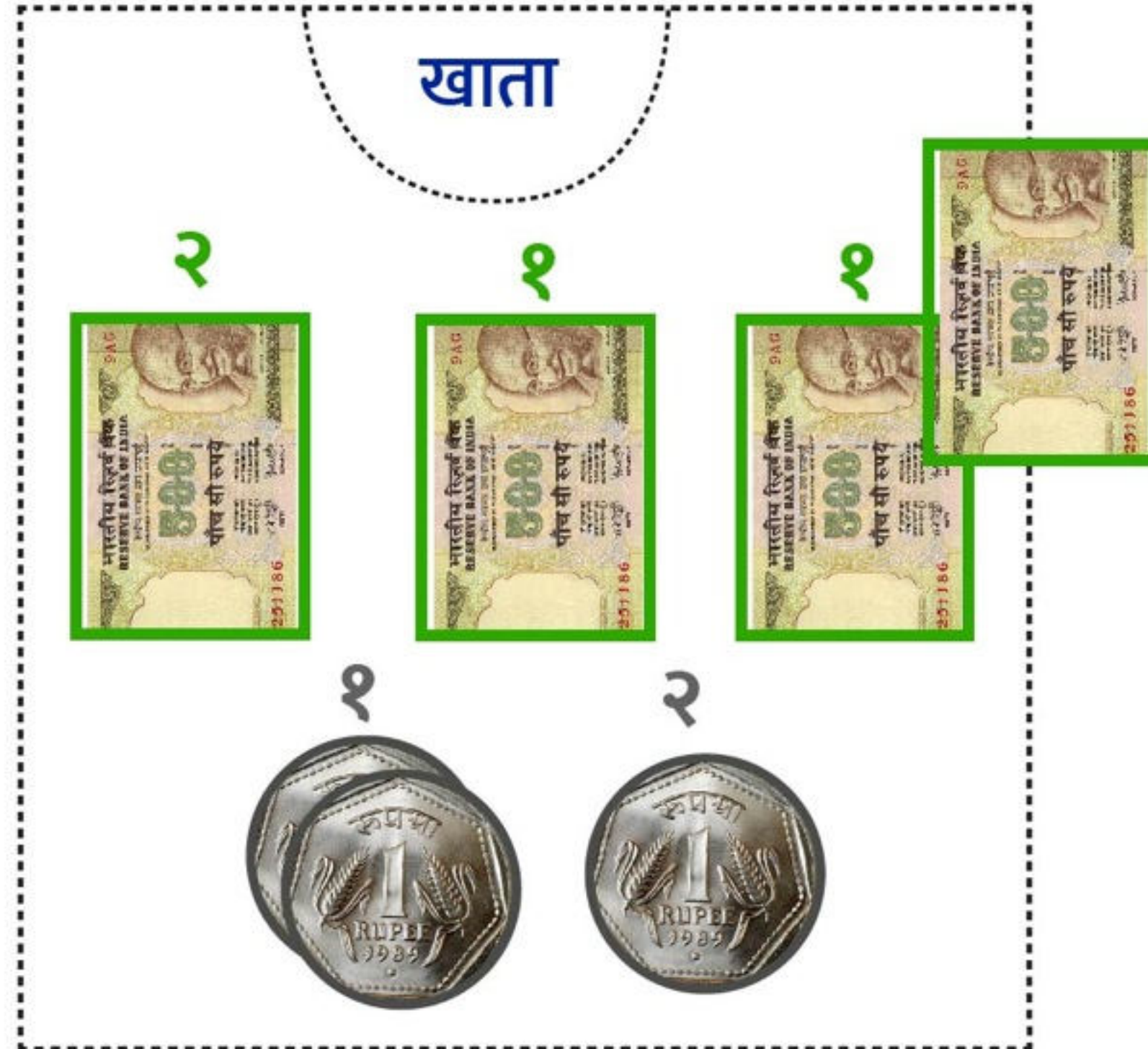


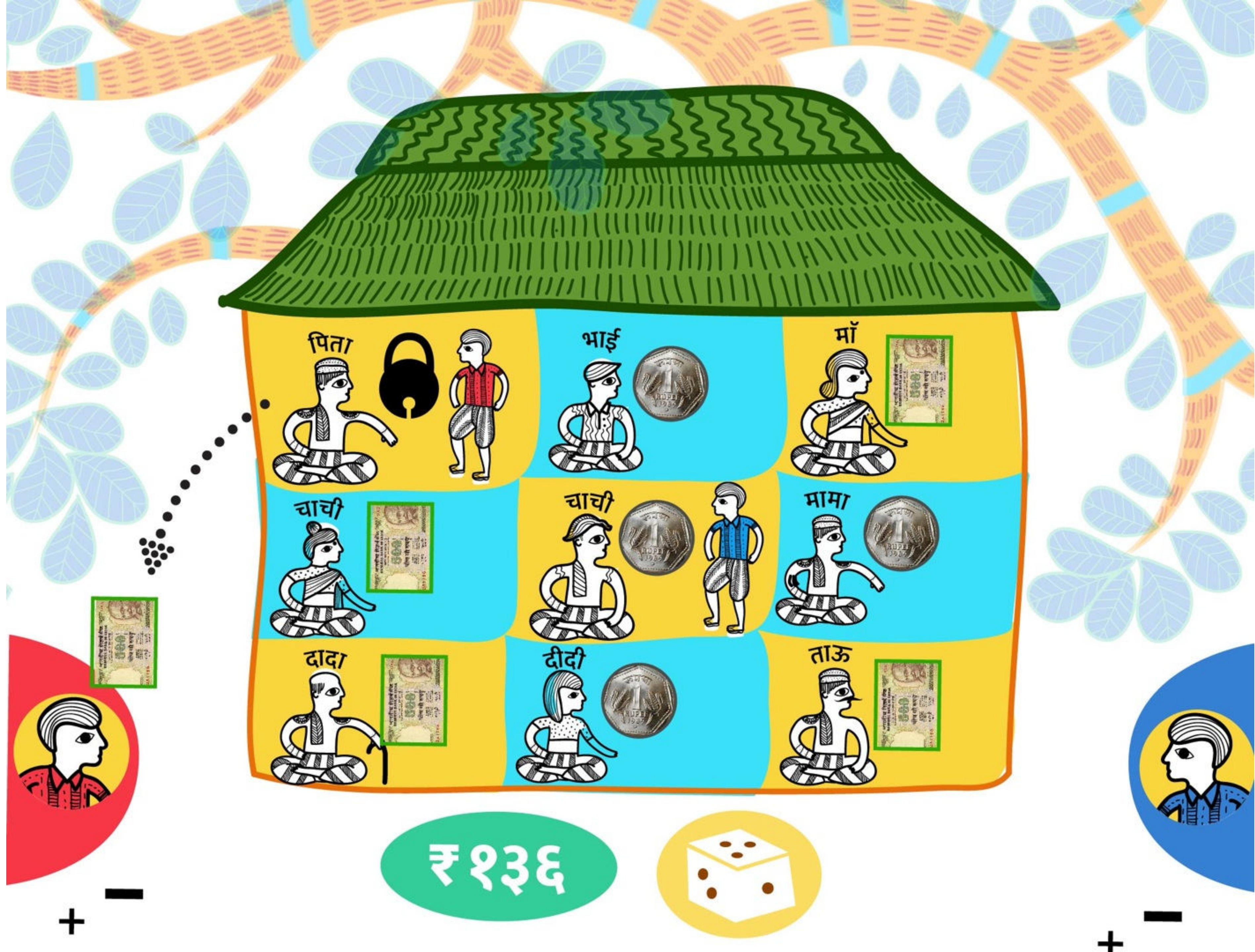


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