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GAME-601-001.2022F
Game Prototyping
10/18/2022

ROCKET SCIENCE
A Social Deduction Game

REWORK AND FINAL VERSION

ABSTRACT:
The players in the game are rocket engineers. The players are tasked with gathering materials together to assemble a spaceship to go to the moon. However, one mystery player is trying to sabotage the crew to stop them from building the ship, in fear of unknown elements on the moon. Will the team successfully construct the ship? Or will the villain succeed, stopping the rocket from launching?

MATERIALS:
Cards provided by the game:
>   4 role selection cards
>   6 decks of cards each containing:
>>   1 construction task card
>>   9 material cards

RULES:
Rocket Science is a four player game.

Players are either "engineers" or a "saboteur." The goal of the engineers is to successfully construct pieces of the spaceship. The goal of the saboteur is to stop them.

The game starts with all four players drawing and selecting their role cards. There are 3 "Engineer" cards, and one "Saboteur" card. If a player receives an "Engineer" card, they are an engineer. If a player receives a "Saboteur" card, they are a saboteur. Players CANNOT show their role cards to each other.

At the beginning of every round, one player is assigned the role "head engineer". This role rotates around the table, so no player can be the head engineer twice. The saboteur *can* be the head engineer.

The head engineer selects one deck of cards containing one construction task card, and nine material cards. All nine material cards are given to the three remaining players, giving each of them three cards in their hand. The head engineer currently has no cards in their hand.

The construction task card is laid on the table, informing players of the materials they need in order to complete the construction task.

The engineers must provide materials that satisfy the construction task. On the other hand, the saboteur must provide their materials in a way that ensures the construction fails. (For example, if the task calls for square and circle materials, it would be advantageous for the saboteur to play something else, like a triangle, diamond, or hexagon piece.) When providing materials, players can only play TWO of their three cards, laying them face-down on the table.

Once all players have played their material cards, the head engineer takes the cards and attempts to solve the construction using *FIVE* of the given materials. Then, those *five* material cards are placed back on the table, face-up. The *sixth* material card remains face-down, and cannot be shown to the other players.

If the saboteur is the head engineer for the round, it is advantageous for the saboteur to try and solve the construction task using the wrong materials.

If the given materials **do not** satisfy the construction requirements, the construction fails, and the saboteur gets a point. If the given materials **do** satisfy the construction requirements, the **engineers** get a point. The players are now free to discuss the results of the construction, and can decide whether or not they want to vote on who the saboteur is.

When discussing the results of the construction, players are allowed to talk about and *lie* about the contents of their hands, such as the materials they gave, and the materials they did not give. However, players are NOT ALLOWED to show said material cards. Unprovided materials from the players and the sixth unchosen material from the head engineer CANNOT be shown. In essence, you can talk, but now show.

Voting determines the fate of the entire game, and should be seen as a last resort. If 3 out of 4 players vote to expose someone, the game ends. However, if the saboteur is correctly exposed, the engineers win the game. Otherwise, the saboteur wins.

If no one decides to vote, or if a vote does not pass, the game continues as usual, and the next round begins.

The Engineers Win if:
- 3 ship pieces are successfully constructed.
- The saboteur is correctly exposed.

The Saboteur Wins if:
- 2 ship pieces fail to be constructed.
- The saboteur is incorrectly exposed.

CONSTRUCTION DECK TYPES

DECK 1	REQUIRED MATERIALS	DECK CONTENTS
SQUARE	3	3
CIRCLE	2	3
TRIANGLE	0	3
DIAMOND	0	0
HEXAGON	0	0

DECK 2	REQUIRED MATERIALS	DECK CONTENTS
SQUARE	3	3
CIRCLE	2	2
TRIANGLE	0	2
DIAMOND	0	2
HEXAGON	0	0

DECK 3	REQUIRED MATERIALS	DECK CONTENTS
SQUARE	2	3
CIRCLE	1	2
TRIANGLE	1	2
DIAMOND	1	1
HEXAGON	0	1

DECK 4	REQUIRED MATERIALS	DECK CONTENTS
SQUARE	2	3
CIRCLE	2	2
TRIANGLE	1	2
DIAMOND	0	1
HEXAGON	0	1

DECK 5	REQUIRED MATERIALS	DECK CONTENTS
SQUARE	3	4
CIRCLE	1	2
TRIANGLE	1	2
DIAMOND	0	1
HEXAGON	0	0

DECK 6	REQUIRED MATERIALS	DECK CONTENTS
SQUARE	2	3
CIRCLE	2	3
TRIANGLE	1	1
DIAMOND	0	1
HEXAGON	0	1

ICONOGRAPHY

Role Cards:
(Front)   (Back)

ROLE CARD	ENGINEER	SABOTEUR
	Help construct the rocket ship!	Stop the rocket from being built!

Material Cards:
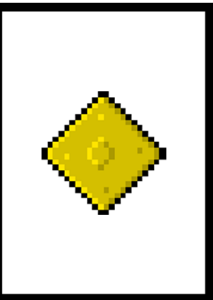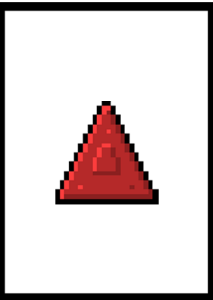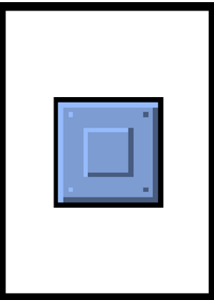
Construction Card Examples:
(Front)   (Back)

CONSTRUCTION CARD	□ x 3 ⬤ x 1 ▲ x 1	□ x 2 ⬤ x 2 ▲ x 1	□ x 3 ⬤ x 2