

The (Minimal) Robot Design Game

version 1.0

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1 Participants

This is a game for 1 dealer (also known as the “associate editor”) and $n \geq 2$ players.

2 Goal

The goal of the game is for players to create a robot design using the resources cards. The design is subject to peer review.

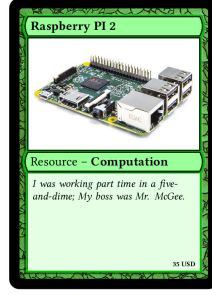
3 Materials

There are three types of cards in the deck:

1. The *Resource* cards (*Sensor*, *Actuator*, *Computation*, ...), some of which are shown in Fig. 2 and Fig. 3.
2. The *Goal* cards (Fig. 1), including the *Task* and *Environment* cards.
3. The *Rewards* cards, (including the *Bitterness*, *Name Recognition*, and *Research* card).

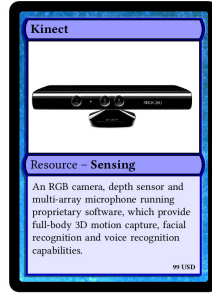
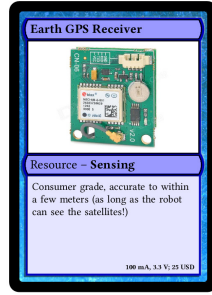


Figure 1: Some of the Goal cards (Tasks and Environments).



(a) Actuation

(b) Computation



(c) Sensing

(d) Power



(e) Platforms

(f) Communication



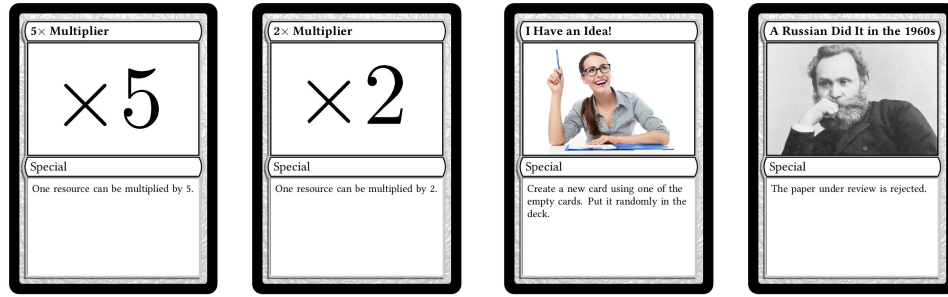
(g) Memory

(h) Materials

(i) Time

(j) Budget

Figure 2: Some of the Resources cards.



(a) Multipliers

(b) Cards with special effects

Figure 3: Some of the Special resource cards.



(a) Bitterness

(b) Name Recognition

(c) Empty Research Card

Figure 4

4 Setup

Make three piles, containing the *Goal*, the *Reward*, and the *Resource* cards, and shuffle each pile.

Select randomly a *Task* and *Environment* card from the *Goal* pile.

Deal three *Resource* cards face down to each player.

The player to the left of the dealer begins.

The player may either **pass**, or **submit a design** or **pick up a card**.

1. **pass** is a NOP; proceed to the next step.
2. **submit a design**, involves proposing a design to solve the task. See the section “Submit a design” below.
3. **pick up a card**. If the player chooses they can pick up a card. The card either comes from the cards on the table, or otherwise, the top card is dealt to the player. One card must be played from the hand to the table immediately (thereafter becoming public, face-up) ensuring that the player never holds more than 3 cards. If the player wishes to **submit a design** they must wait their next turn.

The game proceeds until somebody has successfully submitted a design.

5 The design submission phase

The player must convince the other players that the task has been solved using the three cards in his/her hand plus those on the table. The dealer assumes the role of associate editor.

The associate editor asks: “What is the title of the paper?”. If the title of the paper is not convincing, the associate editor can reject the paper without review.

The player must then write the “abstract” for the paper. The player must describe how the proposed solution might work to solve the given task.

After the player is done, it is time for the peer review process.

Each of the other players gives a response to the proposal, in the stylistic form of a peer-reviewed process, raising objections as they see fit.

It is compulsory for the reviewers to look straight in the eyes of the author while they give their criticism; otherwise the review is not valid.

During this phase, the associate editor takes into account the effect of two cards: any *Bitterness* card held by a reviewer multiplies by two the weight of their opinion. Any *Name Recognition* card held by the player counts as one positive reviewer.

The associate editor makes a final editorial decision and may ask the submitter to respond in a rebuttal phase.

If the design is rejected, the player loses out on the chance to pick up a card. However, they are awarded a *Bitterness* card. The *Bitterness* card give their peer-review responses (when providing input on other designs) additional weight.

If the design is accepted, the player wins this round of the game and gains a *Name Recognition* card.