STEAMPUNK RALLY: FUSION

ATOMIC EDITION

THE STORY

OCTOBER 27, 1953. EARTH.

The Martian invasion has finally been defeated...but the cost in human lives and worldwide destruction has been far too dear.

The champions of the Steampunk Rally assemble with a daring plan: they will travel through time, gathering history's greatest minds, to prevent the war from happening. They will compete in a new, more spectacular Steampunk Rally, adding captured Martian technology and the newly-discovered fusion energy to their own brilliant inventions, to demonstrate the intelligence, benevolence, and power of humanity to the Martians.



By working together, they will avert the apocalypse... but only one can be crowned Ambassador of Earth!

OVERVIEW

STEAMPUNK RALLY: FUSION is a fantastically frenzied racing game where players construct powerful racing contraptions using unique and varied machine cards and a multitude of colorful dice, representing heat, steam, electricity, and fusion power. Roll and place dice on your invention to generate motion and other effects, such as gaining additional dice, preventing damage, and venting previously used dice (which clog up your machine parts).

During the game, you will receive damage from hazardous terrain, events, and cards played by opponents. Racers who end a round with damage must remove installed machine parts...and if you lose too many, your invention explodes!

The game is played over a series of rounds until one player crosses the finish line, at which point one final round will be played. The player *furthest along the track* at the end of that round is declared the winner!

Are you more of a visual learner? We've got you covered!
Head over to ROXLEY.COM/FUSION-TUTORIAL
to watch a video tutorial on how to play.

COMPONENTS



16 Track Tiles (Double-sided)



20 Event Cards in 2 decks



28 Inventor Standees (16 Standee Bases)



1 Play Direction Token



56 Inventor Cockpit & Machine Parts



240 Machine Parts (80 Gold, 80 Silver, 80 Copper)



18 Secret Project Cards (8 Tracking Clips)



80 Boost Cards



5 Challenge Tiles



8 Light Bulb Tokens



6 Original Challenge Tiles



41 Cog Tokens & 51 Metal Cogs



18 Fusion Dice



36 Heat Dice



36 Steam Dice



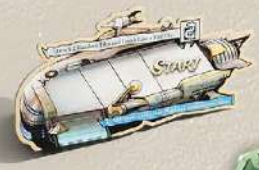
36 Electricity Dice



8 Damage Gauges



8 Player Aids



1 On Ramp Tile

SETUP

1. Flip all **Track Tiles** to either their **Machu Picchu** (purple/green) or **Mars** (orange/red) side. Build a racetrack of any shape by connecting 6 track tiles in the following order:

   1 Start Tile ▸ 3 Middle Track Tiles ▸ 1 Finish Line Tile ▸ 1 End Track Tile (A)

2. Place all of the **Dice** and **Cogs** within reach of all players to create the general supply. (B)
3. Sort all **Machine Part** and **Boost** cards into four separate decks according to the color of their borders (gold, silver, copper, and black). Shuffle and place the decks within reach of all players. (C)
4. Create a discard pile for each of the 4 decks by turning over the top card and placing it next to the deck. (D)
5. Flip the **Draft Direction Token** like a coin and place it between two random players. (E)

EACH PLAYER

6. Choose an **Inventor Standee** and place it on the start tile.
7. Create your player area by taking the related **Inventor Machine Part** (F) and **Inventor Cockpit** (G) and placing them in front of you.
   - Rotate the cards so that their names are in the top-left corner.
   - Ensure the cards are connected through a complete valve connection. (H)



Complete Valve Connection

8. Place a **Damage Gauge** in your player area and set it to "0." (I)
9. Place a **Light Bulb Token** in your player area with the "On" side face up. (J)
10. Leave space near your player area for your dice pool. (K)

YOUR FIRST GAME

For an easier introduction to the game, we recommend new players make the following changes for their first game:

- Play with 4 or fewer players.
- Replace the **Start Tile** with the **On-ramp Tile** and only use **2 Middle Track** (L) tiles.



GAMEPLAY ADJUSTMENTS

Until a player travels beyond the on-ramp tile:

- During the **Draft Phase** (see p. 4), deal each player only 3 **Machine Parts** (and no Boost cards).
- Do not play the **Vent Phase** (see p. 6).
- Conduct the **Race Phase** (see p. 6) in turn order instead of simultaneously.

SETUP EXAMPLE FOR 2 PLAYERS



OPTIONAL SETUP

It is recommended that you play the game at least twice before trying out the additional content below.

EVENT DECKS

When playing on a Fusion racetrack (**Machu Picchu** or **Mars**), leave the draft direction token (E) in the box and replace setup step 5 with the following:



5. If playing **Machu Picchu**, shuffle the **Artifact Deck** (M). If playing **Mars**, shuffle the **Tripod Deck** (N). Place the shuffled deck near the track between two random players where all players can see which direction the arrow on the topmost card is pointing.

SECRET PROJECTS

Secret projects (O) are hidden, long term goals that players may advance by adding dice to them throughout the game. At any time, players may reveal and activate their secret project—the more progress that has been made toward it, the greater the reward.



At the start of a game, after players have chosen their inventor:

- Deal **2 Secret Project Cards** to each player.
- Players then **choose 1** of these cards and attach a clip to the card at "0."
- Players place the chosen card face down in their play area and return the other card to the box.

When using secret projects, modify step 1 of setup to include 1 extra middle track tile (P).



CHALLENGE TILES (CROWDS)

Challenge tiles can provide new and exciting variations for experienced players. There are five new **Crowd Tiles** (Q) in *Steampunk Rally: Fusion*. These can be placed on the racetrack to provide race effects if their requirements are met. (See **Crowd Tiles**, p. 10 for more information.) Additional types of challenge tiles are available when the game is combined with *Steampunk Rally*.



Starting with the player who last chose an inventor, up to three players may add a challenge tile to the racetrack beside any space on the racetrack that does not already feature a challenge.

NOTE: *Be careful when placing challenge tiles! When placing one on a single side of a forked path, the best route becomes clear, potentially making the game a little less interesting.*

COMBINING AND CUSTOMIZING

STEAMPUNK RALLY: FUSION is designed to work as a standalone game, or it can be combined with the original *Steampunk Rally* to create the *Atomic Edition*.

When playing the *Atomic Edition*, combine decks of the same type from both games. Use any combination of inventors, tracks, and challenge tiles from either game to ramp things up (see **Challenges**, p. 10).



Fusion-specific cards feature a fusion icon (R) next to the card name if you need to separate your cards in the future.

HOW TO PLAY

THE GOAL

The goal is to be the inventor *furthest past the finish line* at the end of the final round.

PHASES

Every round consists of the following phases:

- Draft Phase
- Vent Phase
- Race Phase
- Damage Phase
- Upkeep Phase

The following sections describe what to do in each phase. If you are unsure about a particular rule, please reference the Frequently Asked Questions on p. 11.

ORDER OF PLAY

Most of the game is played simultaneously. However, sometimes determining the order of play is necessary for certain aspects of the Draft Phase, Vent Phase, and Upkeep Phase.

Whenever necessary, the order of play is determined by the draft direction token (A). Alternatively, if you are playing with the optional event decks, the order of play is determined by the back of the topmost card of the event deck (B). In either case, simply reference the arrow to determine whether play will go in a clockwise or counterclockwise order, always starting with the player closest to the token.



Draft Direction Token



Event Deck

DRAFT PHASE

At the start of the Draft Phase, each player draws a hand of 4 cards, comprising:

- 1 Gold Machine Part
- 1 Silver Machine Part
- 1 Copper Machine Part
- 1 Boost Card



Players then simultaneously perform the following steps:

1. Choose 1 card from your hand and set down the ones you did not choose (make sure not to confuse them with any secret projects or stashed boost cards).



2. Choose to ATTACH, SELL, or STASH your chosen card:

ATTACH

Attach a machine part to your invention (see Building Your Invention to the right).

SELL

Choose one of the options of dice or cogs displayed in the card's top-right corner. Take the matching amount and color of dice or cogs from the general supply and place them in your dice pool or player area, respectively. Then, discard the card to the appropriate pile.



DISCARD BONUS : Machine parts featuring the discard bonus icon provide you with bonus effects whenever you sell a different machine part. Collect these bonuses every time you sell a machine part.

STASH

If you are drafting a boost card, place it face down underneath your damage gauge.



3. Pass the remaining cards in your hand to the player sitting next to you, and return to Step 1. Pass cards either clockwise or counterclockwise as indicated by the current draft direction (see Order of Play, to the left).

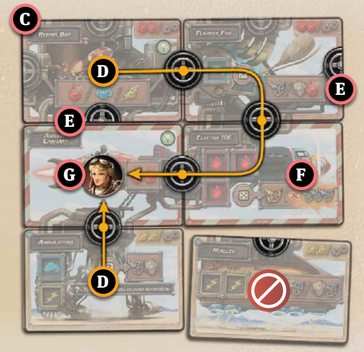
When all players have played their cards, proceed to the Vent Phase.

DRAFT PHASE (CONTINUED)

BUILDING YOUR INVENTION

When attaching or removing machine parts:

1. Cards should be rotated so that their names are in the top left corner. (C)
2. There must be a chain of complete valve connections from every machine part to your inventor cockpit. (D)
3. Other sides of the machine part may connect to anything, including:
   - Incomplete valves touching card borders or nothing at all. (E)
   - Images of the ground being positioned in the air or connecting to card borders.



At any point in the game, for any reason at all, you may rearrange parts on your invention.

You may also discard unwanted machine parts from your invention at any time. When discarding, the following rules apply:

- This does not count as a sell action; you do not gain any dice or cogs.
- Return any dice present on the machine part to the general supply.
- Any cogs present on the machine part are returned to your player area.
- Place the card in its discard pile.
- If it is your inventor machine part (F), return it to the game box.
- You cannot discard your inventor cockpit. (G)

MACHINE PART CARDS

Machine parts may be attached to expand your invention. Each part has the potential to be activated during the Race Phase for their effects (H). (See Activate a Machine Part, p. 6)

Gold Machine Parts

Are mainly used to generate motion needed to move your invention.



Silver Machine Parts

Are mainly used to generate, multiply, and convert dice that you will use to power your invention.



Copper Machine Parts

These parts have 4 valve connections for easily expanding your invention.



BOOST CARDS

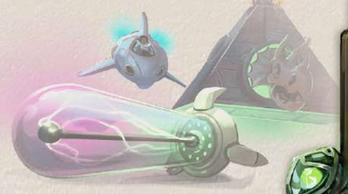
Boost cards have no valve connections and cannot be attached to your invention. Your stashed boost cards should be stored face down beneath your damage gauge at all times to prevent you from accidentally passing them to the next player during the Draft Phase. You may look at your own stashed boost cards at any time.



Unless otherwise specified, you may use a boost card at any time, including at the very end of a phase. Boost cards stashed during the draft may be used immediately as long as all players have drafted the same number of cards out of the current draft. There is *no limit* to the number of boost cards you may play during a given phase and there is no limit to the number you may stash.

When played, resolve the card's effects immediately. In addition to the written effect, this may include gaining dice or cogs, venting dice, taking damage, etc. (For a full list of effects, see Race Effects, p. 8).

If an effect remains in play for the duration of a phase or round, place the boost card face up near the track as a reminder to all players. When a card's effects have been resolved or are no longer applicable, place it onto its discard pile.



VENT PHASE

Note: *Skip the Vent Phase during the first round of each game.*

Players who have dice occupying die slots on their machine parts may spend any number of cogs to reduce the values of these dice. Each cog spent allows a player to either reduce the value of one die by 2 or to reduce the value of two dice by 1.

All dice reduced to 0 (or a negative value) are returned to the general supply, freeing up their dice slot. Removing a die in this way is called "venting". (A)







IMPORTANT! *Fusion dice may never be vented.*



VENT PHASE BOOST CARDS

Certain boost cards are only playable during the **Vent Phase**. If multiple players wish to play boost cards, resolve them in draft direction order, starting with the player closest to the draft direction token or event deck (as applicable). Each player resolves all boost cards they wish to play before moving to the next player.

Normal boost cards (that do not specify "Play during **Vent Phase**") may still be played during this time.

RACE PHASE

IMPORTANT! *All players must resolve the Race Phase simultaneously, as waiting to take turns will result in a degraded game experience.*

Each player rolls all of the dice in their dice pool. Your dice pool includes all dice acquired from selling drafted cards this turn but may also include dice from effects generated by other sources such as boost cards and secret projects. Any die stored in a diagonal slot (B) may be rolled and added to the dice pool at this time.



All players then perform some or all of the following actions, as many times as they wish and are able to. You may perform and repeat these actions in any order that you like.

SPEND A COG

Discard a cog to manipulate an unplayed die in your dice pool in one of the following ways:

- Re-roll it
- Increase or decrease its value by 1

USE YOUR LIGHT BULB

One machine part at a time, resolve all of the race effects on your inventor cockpit and machine parts that show the icon. **You may not perform other actions between resolving these and must resolve all of them.**



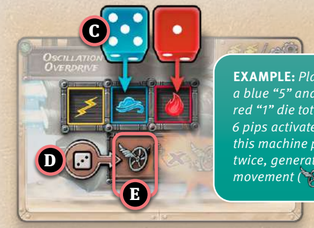
ACTIVATE MACHINE PARTS

Trigger the race effects of one of your machine parts by placing one or more dice from your dice pool onto it using the following three steps. **Resolve each activation completely before placing dice for any other future activations.**

1. Place 1 or more dice from your dice pool onto matching open die slots (C) on one of your machine parts. The type of die being placed must match the slot it is being placed into. You are able to mix different die types in a single activation as long as each die is being placed into an appropriate slot.

2. To determine how many times the card's race effects are activated, divide the number of pips you placed on the card by the number of pips indicated on the die image on the card, ignoring any remainder. (D) **Do not include any dice already on the machine part prior to this activation.** If the number of pips placed is not equal to or higher than the number required to activate the part, the activation will have no effect.

3. Machine parts that have a star instead of pips on the die image will activate **once** when a die is placed onto them, regardless of that die's value (it must still be the correct type). Immediately resolve race effects resulting from this activation. (E)



EXAMPLE: *Placing a blue "5" and a red "1" die totalling 6 pips activates this machine part twice, generating 2 movement ( ).*

If an activation produces multiple effects (F), resolve them in any order you choose (you may not activate other effects between them, however).



Given a choice of effects separated by a slash (or horizontal silver bar) (G), choose only one option.



If an overcharge effect (H) is activated, the machine part is immediately discarded (see **Overcharge**, p. 8).



DAMAGE PHASE

During this phase, players whose damage gauge shows a negative value must resolve the damage their invention has taken. (Players with a damage gauge showing 0 or higher do nothing.)

If your damage gauge displays a negative value, you must discard that number of machine parts from your invention (I). Then, reset your damage gauge to 0. If you do not have enough parts on your machine to discard, your invention explodes.



EXPLODING

If at any time during the game you are required to discard machine parts but do not have enough, your invention explodes.

If your invention explodes:

- Your inventor cockpit (J) is not discarded.
- Your cogs, secret project card (if applicable), and any stashed boost cards are unaffected.
- Reset your damage gauge to 0.
- All players who explode on the same turn move their inventor standees to the space behind the player in last place. (K)



UPKEEP PHASE

Before beginning a new round, you must perform the following tasks:

1. If you have any diagonal die slots on your invention (L), you may store an unplayed die on each one for use in a future round.



2. Flip your light bulb token to its "On" side.
3. Return all unplayed dice from your dice pool and all dice placed on your secret project (if applicable) to the general supply.
4. If using the draft direction token, flip it to its opposite side **-OR-** if using the optional event decks, instead resolve any applicable event cards (see **Track Features**, p. 9).

Then begin a new round.

THE FINISH LINE

IMPORTANT! *Crossing the finish line first does not automatically make you the winner!*

When an inventor crosses the finish line, it signifies that there will be one more final round. Finish the current round and play the next round normally.

After the final round, **the inventor who is the farthest along the track is the winner!**

In the event of a tie, the tied player with the most machine parts is the winner. If there is still a tie, time travel back to the beginning of the race and attempt to change history until the tie is broken.



SECRET PROJECTS

Secret projects are hidden, long term goals that players may advance by adding dice to them throughout the game. To include them, see Optional Setup on p. 3.

Once during each **Race Phase**, each player may place a run of dice (e.g.: 3, 4, 5, 6), of any color, mixture of colors, and length onto their secret project card (M). Advance the clip along the card by 1 for each die placed (N).

REMEMBER: *You can use the* **Spend a Cog** *action to alter the pip value of dice to more easily create larger runs. Fusion dice can also be used to make a run that includes higher numbers.* (O)



During the **Upkeep Phase**, any dice placed on your secret project card are removed and returned to the general supply.

At any point of the game (unless otherwise specified), you may flip your secret project to activate it. When you do:

- Resolve the effects of the row with the highest requirement number (P) that your clip (Q) has reached or passed.
- Remove your secret project card from the game.



RACE EFFECTS

Race effects are represented by symbols shown on machine parts, boost cards, tripod or artifact cards, challenge spaces, and secret projects.

You must immediately resolve any race effects you receive. If you receive multiple effects simultaneously, you may choose the order in which they are resolved.

GAIN A DIE

Take a die of the specified color from the general supply, roll it, and place it in your dice pool. Remember, if this effect happens during the **Race Phase**, this die is immediately available to use.

Fusion dice have die values ranging from 4 to 9. They function similarly to other dice but may be placed into a die slot of any color. However, once placed, they remain in that slot as long as the machine part remains in play; they may never be vented or discarded.

DISCARD A DIE

If possible, discard a die (of any value) of the specified color from a die slot on your invention, returning it to the general supply. If this symbol is white, it may be used to remove any color die (except a fusion die).

TAKE DAMAGE

Reduce the value on your damage gauge by 1. If this would cause your damage gauge to go below -7, immediately discard 1 machine part from your invention instead (keeping your damage gauge at -7).

INFLICT DAMAGE

Each symbol causes 1 damage to all other inventions in your space on the track.

If the symbol has arrows extended to the right, this also affects all inventions ahead of you on the track.

If the symbol has arrows extended to the left, this also affects all inventions behind you on the track.

REINFORCE INVENTION

Increase the value displayed on your damage gauge by 1. If this would cause your damage gauge to go above 3, then gain a cog instead (and keep your damage gauge at 3).

GAIN A COG

Take 1 cog from the general supply.

MOTION

Move your inventor standee 1 space forward on the racetrack. Resolve any terrain icons in that space (see **Track Features**, p. 9).

SMOOTH MOTION

Move your inventor standee 1 space forward on the racetrack. Terrain icons in that space do not cause damage to you.

OVERCHARGE

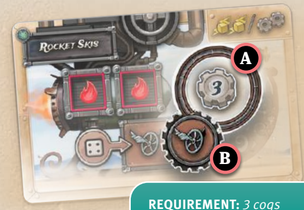
When activating a machine part that features an overcharge icon, resolve its standard effects (outside square brackets) first. In addition, you may choose to discard the machine part to activate the overcharge effects (in square brackets).



REMINDER: *Discard the part after activating the overcharge effect.*

GEAR UP

Some machine parts feature numbered **gear up** slots (A), which are attached to bonus race effects (B). These bonus effects are added to the card's activation if the card has been geared up. You may gear up the card at any time by placing the indicated number of your cogs onto these slots.



REQUIREMENT: *3 cogs*
BONUS: *1 additional motion*

Cogs placed on a gear up slot cannot be removed, but if a machine part with cogs on it is discarded, the cogs are returned to your player area.

If a machine part features multiple gear up icons, they may be filled in any order, together or separately.

TRACK FEATURES

During the race, you will encounter various obstacles and features on the racetrack. Each will affect your invention in a different way.

TERRAIN

When a player moves forward into or through a space featuring **terrain**, they must reduce their damage gauge by the number shown on the icon. If multiple terrain spaces are moved into or through in one effect or activation, the total damage accumulated must be applied.

TRAPS (MACHU PICCHU)

When a player moves forward into or through a space showing a **trap**, they must either apply the indicated terrain damage **-OR-** discard an unplayed die from their dice pool of the type indicated (or a fusion die).

Traps cannot be ignored using smooth motion.

CANALS (MARS)

For an Invention to move forward into or through a **canal** terrain space requires either 2 motion generated from a single machine part activation **-OR-** 1 smooth motion. (C)

Nothing happens if you generate or receive a single point of motion and the only space available on the racetrack in front of your inventor is a canal. (D)

As a benefit, if you end the **Race Phase** in a canal, you may immediately discard a die from any die slot on your invention (except a fusion die).

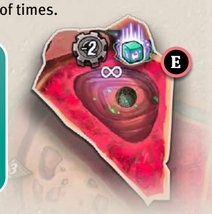


CANAL REQUIREMENT:
2 motion
– OR –
1 smooth motion

FUSION FACTORIES (MARS)

If, during any phase, a player's inventor is in a space containing a **fusion factory** (E), they may choose to spend 2 cogs to gain a fusion die. Whenever you do this, immediately roll it and add it to your dice pool. You may perform this transaction any number of times.

NOTE: *Players may not use a Fusion Factory between resolving two or more motion symbols that were gained by the same effect or machine part activation.*



ARTIFACT CARDS (MACHU PICCHU)

Artifact zones (F) are found only when racing on the Machu Picchu track tiles. They cover two track spaces.

NOTE: *Artifact cards are connected to a specific Artifact zone as soon as they are drawn and will remain connected for the rest of the race. Some are positive and some are negative!*

If any inventor is in an artifact zone during the **Upkeep Phase** perform both these steps:

1. If this is the first time a specific artifact zone has been activated during this game (it does not have a card attached to it yet), draw the top card from the artifact deck and place it face up next to the zone (G).
2. Inventors in artifact zones apply the effects shown on their associated artifact card, in the order determined by the order of play (H).



TRIPOD CARDS (MARS)

If any inventors begin the **Upkeep Phase** in a space featuring the **tripod** icon, also signified by the **red spaces** on the track tiles (I), then:

1. Draw the top card from the tripod deck, and place it face up on the tripod discard pile. (J)
2. All inventors in tripod spaces now apply the effects shown on the card, in the order determined by the order of play indicator on the back of the next tripod card. (K)



DETERMINING RACE ORDER

Some cards refer to players that are behind or ahead of each other on the track. For these purposes, players on different paths of a forked track are neither behind nor ahead of each other.



FORKED TRACK EXAMPLE: *Neither of the inventors in the fork (L) / (M) are considered to be in front of or behind one another. Both of these inventors are considered to be in front of the inventor who has not entered the fork (N).*

GAME VARIANTS

SOLO GAME

SETUP CHANGES

Modify step 1 to include all **8 track tiles** when creating your racetrack.

Add new step 11: Create **6 draft decks**, each containing the 4 cards you will receive each turn (1 gold, 1 silver, and 1 copper machine part, and 1 boost card).

DRAFT PHASE

Pick up one of the draft decks you created during setup. For each card, choose one of the three **Draft Phase** options:

- **ATTACH**
- **SELL**
- **STASH**

END OF THE GAME

Your goal is to score as many points as possible by the end of the game. The game concludes at the end of the round when either of the following occurs:

- You take the final, sixth draft deck
- You cross the finish line

SCORING

If you manage to cross the finish line, you win! Whether you blast past the finish line or sputter and come up short, calculate a score below to determine how much you impressed the crowd:

- **Distance Moved**: 1 point per space moved before the finish line.
- **Extra Mile:** 5 points per space moved past the finish line.
- **Extra Turns:** 30 points per draft deck you had remaining (unused).

Bonus Achievements:

- **Mad Scientist:** +10 points if you activate your secret project at level 12.
- **Rube Goldberg Prodigy:** +10 points if you end the game with a machine of at least 8 parts.
- **King Cog:** +5 points if you end the game with at least 8 cogs.
- **Chicken:** +5 points if you end the game with 3 shields.

CHALLENGES

CROWD TILES

When an inventor moves **forward** into or through a **crowd tile** (A):

- Gain 5 cogs, minus 1 cog per incomplete valve connection on your Invention.
- If your invention has 5 or more incomplete valve connections, then nothing happens (barring the jeering of the crowd).



ORIGINAL CHALLENGES

The following challenge tiles are found in the original *Steampunk Rally* and can be included during optional setup. In the case of **jumps** and **crowds**, those can be found printed directly on the **Hoverdrome side** of the track tiles.

Coal Mine, Power Station, & Newcomen Atmospheric Engine



While on this space you may spend 1 cog to gain 1 die of the color indicated (/ /). You may repeat this transaction any number of times.

Rails



While on this space you may discard one electricity die from your unplayed dice pool to gain two motion.

Steam Pony



Once per game, while on this space, you may discard one steam die from your unplayed dice pool to gain 3 cogs.

Glaciers



When entering or passing through this space, either discard one heat die from your unplayed dice pool **-OR-** take 2 damage from the terrain.

NOTE: *A fusion die may be used to pay for* Rails, Steam Pony, *and* Glaciers.

Jumps

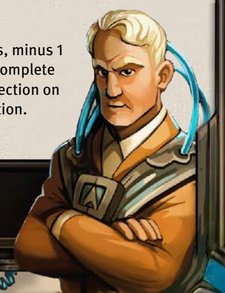


If you end the **Race Phase** here, move backward until you are on a space which does not feature a warning icon.

Crowds



Gain 5 cogs, minus 1 cog per incomplete valve connection on your invention.



For more variants, visit:
ROXLEY.COM/FUSION

FREQUENTLY ASKED QUESTIONS

DRAFT PHASE

Should I wait for everyone else to draft a card from the current hand before I move on to the next hand?

It is polite to wait so that everyone can keep up, but it is not strictly necessary. Do what feels right for your group of players.

What happens if there are not enough cards in a deck at the start of the Draft Phase?

Shuffle that deck's discard pile to create a new draw deck. If there are still not enough cards, each player who has 5 or more cards from that deck must immediately discard cards of that type until they have 4 of them remaining.

RACE PHASE

Is there an order in which I have to perform the three possible actions?

No. You may perform them in any order and as many times as you are able to or want to, including switching back and forth between actions.

Do I have to use my light bulb token and as many dice as possible? No.

Can I flip the light bulb token more than once per round?

No. The only exception is the "Inspiration" boost card.

Can I choose to only activate some cards with the light bulb symbol on them?

No. If you flip the light bulb token, then you must activate every light bulb card and resolve all of their effects in any order before doing anything else.

Why would I want to decrease the pip value on one of my dice?

If you are playing with secret projects, then you might create a longer run of dice.

Do I have to fill every die slot when placing dice onto a machine part? No.

Can I place dice onto a machine part if they sum to less than the pips shown on the die symbol on the card?

You technically can, but it will have no effect.

If I activate a machine part that offers a choice of effects (separated by a slash or bar) multiple times, can I choose differently for each activation? Yes.

Can I activate a machine part more than once during the Race Phase? Yes

What should I do if a machine part has a question mark instead of pips on the die image?

Machine parts that have a "?" instead of pips have an activation number equal to the number of parts in the machine.

What are my options when resolving race effects?

You must resolve all race effects, but you may resolve them in any order. For instance, gaining 2 shields and 1 motion may be resolved in three different orders:

/ /

How can I remove dice from die slots?

Dice may be removed through Vent Phase actions, race effects that cause you to discard a die, or some boost cards.

Can I discard a die that I just placed?

Yes, using race effects or boost cards that remove dice. (But remember that fusion dice may never be vented or discarded from your die slots.)

DAMAGE PHASE

Do I have to remove my invention's outermost machine parts first?

No. You may remove any machine part and rearrange other machine parts as necessary. See **Building Your Invention**, p. 5.

What happens if I have to discard my inventor cockpit?

Your invention explodes. See **Exploding**, p. 7.

If my damage gauge shows a positive number, do I still reset it to "0"?

No, it carries over to the next round.

UPKEEP PHASE

Some machine parts feature storage die slots. What are these for?

You may place 1 unused die on each of these slots, which are then rerolled and added to your dice pool in the next **Race Phase**.

How many dice can I place on a storage die slot?

You may place 1 die on each storage die slot.

CROSSING THE FINISH LINE

What happens if an inventor moves beyond the very last space of the racetrack?

Record this extra motion by beginning another lap of the racetrack; ignore any terrain printed on the racetrack during this lap.

What if (due to explosions) no player ends the final round past the finish line?

The player who is furthest along the racetrack wins.

ARTIFACT & TRIPOD CARDS

What if there is not enough room to place an artifact card next to an artifact zone?

Place the artifact card a little further away from the track. Then place a die from the supply on the artifact zone and a matching die on the artifact card to show they are connected.

If, during the Upkeep Phase, I am in an artifact zone that I have previously finished in, do I still receive its cards effects? Yes.

Do players in different tripod spaces each draw a tripod card during the Upkeep Phase?

No. Only 1 tripod card is drawn and it applies to all these players.

If a tripod or artifact card presents a choice of effects, can each affected player choose differently? Yes.

EXPLODING

What if I am in last place when my invention explodes?

Move your inventor standee back 1 space.

What if multiple inventions explode at the same time?

All of their inventor standees move backward to the space behind the invention that was in last place before the explosions.

RACE EFFECTS

What does it mean if there are race effects separated by a slash?

This is a choice of effects. You must choose one of these options to resolve.

Can I choose to resolve only some of the activated race effects?

No. If there is no slash on the card, you must resolve all applicable race effects.

SECRET PROJECTS

When placing dice on a secret project card, does one die count as a run of dice?

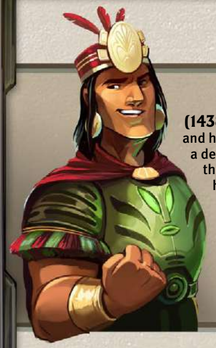
Yes. It counts as a run of one die.

GENERAL SUPPLY

What happens if the general supply runs out of a needed color of die?

Remove a die of the missing color from a die slot on a player's machine part, substituting the removed die with a red, yellow, or blue die of a different color from the general supply.

INVENTOR BIOGRAPHIES



PACHACUTI

(1438–1471+) When Chanka warriors invaded Cusco, the king and his eldest son fled, but the younger son Cusi Yupanqui rallied a defense of the city so impressive that it was said the stones themselves rose to fight for him. With the Chanka defeated and his worth proven, Yupanqui was appointed the royal successor and became known as Pachacuti, roughly translated as "He Who Remakes The World." The Inca Empire expanded under Pachacuti's rule, and he oversaw the construction of many great architectural and engineering feats, including the city of Machu Picchu, which features extensive aqueducts and hundreds of terraces, all constructed without the aid of wheels, draft animals, or iron tools.

ANNIE EASLEY

(1933–2011) When her educational path as a pharmacist was derailed, Easley decided to apply at NASA (then NACA) after reading a story in the paper about twin sisters working there as "computers." When the first non-human computers were introduced, she became an early expert at programming. Though she had to struggle against discrimination, Easley's career would encompass a variety of disciplines, spanning rocketry, nuclear power, wind and solar energy, batteries for hybrid cars, and real estate. Her unflappable determination in the face of adversity may be necessary for coordinating humanity's most audacious project yet.





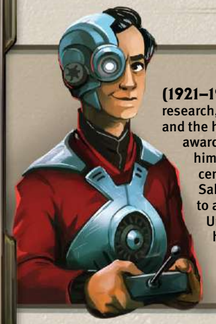
AMELIA EARHART

(1897–1937) Family financial troubles forced Earhart to abandon her university studies and sell her biplane "The Canary," which she had flown to a record-setting 14,000 feet. But Earhart remained involved in the aviation community, and after becoming the first pilot to fly solo from Hawaii to the United States mainland, she began planning her most ambitious trial: a flight around the world. Three quarters of the way through the trip, she disappeared somewhere over the Pacific ocean. For decades, fans have speculated about her fate. Fewer have speculated about the trace temporal-atmospheric signature of a bathyscaphe vessel...

ALAN TURING

(1912–1954) Despite a general strike in Britain, 13-year-old Turing was so set on attending his first day at boarding school that he rode the 97 kilometers on his bicycle. His passion for science, mathematics, and astronomy did not make him a favorite with the teachers there. Later in life, after writing a seminal PhD on ordinal logic, Turing went on to be an invaluable guardian of Great Britain, cracking the unbreakable Enigma code at Bletchley Park. Although mistreated badly by the government he covertly protected, Turing is acknowledged today as the father of computer science. Recruited to try and crack enigmatic Martian transmissions, Turing will no doubt put them to the test!





ANDREI SAKHAROV

(1921–1989) After significant contributions to Soviet nuclear research, Sakharov became concerned about nuclear proliferation and the health effects of fallout from weapons testing. After he was awarded the Nobel Peace Prize, the Soviet government prevented him from travelling to the award ceremony and attempted to censor his anti-war writings, exiling him to the city of Gorky. Sakharov used hunger strikes to persuade Mikhail Gorbachev to allow his wife, fellow activist Yelena Bonner, to travel to the United States for heart surgery, where she was able to bring her husband's plight to the attention of Western leaders. Sakharov was released and continued the fight for peace and human rights. His mix of scientific and political acumen may be critical, if the war with Mars is to be averted.

ASIMA CHATTERJEE

(1917–2006) After becoming the first woman in India to earn a Doctorate of Science in 1944, Chatterjee focused her love of botany into research on the chemical compounds of plants. She developed drug treatments for epilepsy and malaria, as well as vinca alkaloids, agents derived from the pink periwinkle plant that are used today in chemotherapy. In 1975, the Indian government awarded Chatterjee the Padma Bhushan award, and she was appointed General President of the Indian Science Congress. Visiting other worlds can carry unexpected health risks, and Chatterjee's methodical precision and expertise may prove invaluable to human and Martian alike.



INVENTOR BIOGRAPHIES



HEDY LAMARR

(1914–2000) A well-known star of the silver screen, Lamarr would return to her trailer between takes and perform experiments. She persuaded her sometimes-lover, aviator Howard Hughes, to replace his boxy aircraft design with a more aerodynamic shape based on fish and birds, and he gave her command of his team of scientists for whatever she might dream up. During WWII, she learned that Allied torpedoes could be sent off course by jamming their radio signal, and she designed a signal-hopping "spread spectrum" system that could send signals discreetly. After two decades of skepticism, this system would become instrumental in the telecommunications systems we use today for cellular phones and WiFi.

MARIE MARVINGT

(1875–1963) An affinity for bobsledding, skiing, rifle shooting, fencing, gymnastics, swimming, cycling, horseback riding, mountain climbing, ballooning, and numerous other sports earned Marvingt the nickname "The Fiancée of Danger." Marvingt accrued dozens of awards in her lifetime, including 20 winter sports gold medals—but her biggest project was the idea of an "air ambulance" that would use planes to rescue civilians or military casualties from danger. She drew up a prototype but did not finish it before WW1, instead participating in the war as the first woman to fly combat missions. She later established an air ambulance service in Morocco, consulted with government officials for its use in WWII, and fought in the French Resistance.





CARLETON ELLIS

(1941–1941) Many firms were reluctant to allow visiting access to their production facilities to Ellis, who at the end of his career held a staggering 753 US patents on a wide variety of chemical formulas. These included a reduced-knock gasoline, multiple methods for flameless combustion, soil-free hydroponics, fireproofing for airplane wings, longer lasting paint, unsaturated polyester, improvements on plastic polymers, and a more digestible version of margarine utilizing vegetable oils instead of animal fats. A merchant marine tanker was named in his honor, and according to TIME Magazine's eulogy his inventions gave birth to more than 100,000 compounds.

ELSIE MACGILL

(1905–1980) After completing her masters in aeronautical engineering at age 24, MacGill was diagnosed with polio and told she would never walk again. She not only regained her legs, but also her wings, performing dangerous test flights for the National Research Council of Canada and later designing and testing airplanes at Ontario's "CanCar" company. MacGill helped make Canada a world class aircraft manufacturer and oversaw the production of 2,000 Hurricane fighter planes for the Second World War. In later life, inspired by work done by her mother and grandmother, she became an feminist advocate for women in engineering.



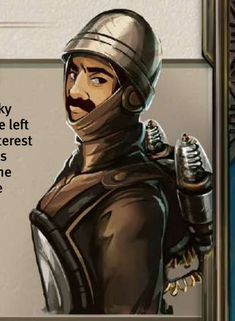


AUGUSTE PICCARD

(1884–1962) In 1931, Piccard and his assistant Paul Kipfer ascended to a record height of 51,793 feet to measure cosmic radiation in the stratosphere, in order to gather experimental evidence for his friend Albert Einstein's theory of relativity. To accomplish this feat, he and his brother Jean Felix Piccard designed a pressurized rigid gondola. The Swiss physicist would make 25 more balloon flights, and later adapted his pressurized gondola design into bathyscaphes that would revolutionize deep sea exploration. Further upgrades to the bathyscaphe vessel would make it capable of surviving travel through time and space, to before the Martian War...

IGOR SIKORSKY

(1889–1972) Inspired as a young boy by Jules Verne, Sikorsky created a model airship powered with a rubber band. Later, he left the Naval Academy to pursue engineering with a rekindled interest in aviation, after his father told him about the Wright Flyer. His experiments with helicopter and aircraft design earned him the praise of Czar Nicholas II, which consequently earned him the enmity of the Bolshevik Revolutionaries. Leaving behind his wife and daughter, he fled to France, where he built bombers for the Great War, and then to the United States. It was here that Sikorsky finally achieved his boyhood dream and created the first reliable helicopters.



INVENTOR BIOGRAPHIES



ALEXANDER GRAHAM BELL

(1847-1922) Born in Edinburgh, Bell designed a wheat de-husking machine for his father's friend's mill at the age of 12. His mother's concurrent loss of hearing compelled Bell to become obsessed with the science of acoustics. His continued work with the deaf, and his research into hearing and speech, led him to discover a means of transmitting sounds via electrical current, earning him the first patent for the telephone. Granted numerous awards, prizes and honorary degrees, Bell spent much of his later life at his estate in Nova Scotia applying his endless curiosity to a broad range of inventions. He considered the telephone an intrusion and refused to have one in his study.



ADA LOVELACE

(1815-1852+) The mathematical talents of Augusta Ada King, Countess of Lovelace, led her to become involved with Charles Babbage's Difference Engine, an entirely mechanical calculator, and eventually the modern computer, possibly making Ada the world's first computer programmer. Pushed toward mathematics by her mother at a young age, she became inspired by the innovations of the industrial revolution and created fanciful designs for ships and steam-powered flying machines. Unknown to reputable historians, Ada's ongoing poor health drove her to develop the Difference Engine to a level that allowed her to upload her consciousness into her invention, achieving immortality via a construct of iron and porcelain.



GUGLIELMO MARCONI

(1874-1937) Born a nobleman, Marconi's gentle personality hid a volatile, passionate and intensely loyal man determined to prove the superiority of his nation. Building on the work of Heinrich Hertz and Nikola Tesla, Marconi pioneered long-distance radio telegraphy. Credited by many as the inventor of the radio, in 1901 he transmitted the first wireless signal across the Atlantic Ocean. He shared a Nobel prize with Karl Ferdinand Braun, was appointed Honorary Knight Grand Cross of the Royal Victorian Order, made a marchese and senator by the Kingdom of Italy, and given power in Italy's fascist party by Benito Mussolini. He would later insist his intention was just to make people safer, and asked "Have I done the world good, or have I added a menace?"



HERTHA AYRTON

(1854-1923) Phoebe Sarah Marks, AKA Hertha Ayrton, was a pragmatic and driven English engineer and inventor who held 26 patents for mathematical dividers, arc lamps, electrodes, and air propulsion. Like her close friend Marie Curie, she faced institutional sexism, and was denied a mathematics degree from Cambridge and entry into the Royal Society. Undeterred, she pursued a certificate from Girton, Cambridge's women's college, founded a fire brigade and a mathematics club, and led their choral society. Hertha's studies of the electric arc had a huge impact on the design of public lighting solutions. And her amazing successes in the fields of physics, mathematics and engineering led to the removal of restrictions that denied women in the U.K. the right to serve on scientific committees.

ALBERT EINSTEIN

(1879-1955) The academic world began to take notice of this dapper young college professor in 1905, later touted as his miracle year. Einstein published four mindblowing papers that would forever revolutionize physics, covering the photoelectric effect, Brownian motion, special relativity, and equivalence of mass and energy. Initially shying away from celebrity, Einstein used his fame to promote pacifism, internationalism, and Zionism. Despite his fervent belief in peace and cooperation, fears of Nazi research into nuclear weapons compelled him to sign a letter to Roosevelt that led to the creation of the Manhattan Project, a weaponization of his famous formula, E=mc2. He would look back on this as his one great mistake.



ALBERTO SANTOS-DUMONT

(1873-1932) Credited in Brazil as the Father of Aviation, the charming Santos-Dumont spent most of his adult life in Paris studying physics, chemistry, mechanics, electricity, and most devotedly aviation, which he hoped could usher in a prosperous new era for humanity. His aircraft designs were inspired by the coffee plantations he grew up on, as well as the works of Jules Verne. In 1901 he was awarded the Deutsch de la Meurthe prize for flying his dirigible from the Parc de Saint-Cloud to the Eiffel Tower and back in just 30 minutes. In a charitable gesture, he gave half the prize to his crew and donated the other half to the poor of Paris. By 1908 he had designed the world's first series production fixed-wing aircraft, the Demoiselle, the design for which he made freely available.



FERDINAND VON ZEPPELIN

(1838-1917) Descendant of a noble family dating back to the 1400s, Zeppelin served in the Prussian Engineering Corps in several wars. He also traveled to the USA to observe the civil war, where he joined the Union Army as a volunteer. It was there that he took his first ascent in a balloon. This led to a fascination that compelled him to pursue airship engineering. Zeppelin pioneered the use of airships for military use by the German army, and his LZ series provided inspiration for many successive prototypes, some of which were actually crowd funded by the public. Using his designs, the German Aviation Association ushered in the age of air transportation, safely carrying 37,250 passengers on over 1,600 flights before the outbreak of World War 1.



ELIJAH J. MCCOY

(1844-1929) Born in Canada the son of runaway slaves, McCoy's family moved back to the U.S. where he would start his career as a locomotive fireman, stoking fires and oiling engines. Despite obtaining a degree in Edinburgh, racial discrimination prevented him from finding work as a mechanical engineer. This did not stop him from revolutionizing steam engine maintenance with his automatic lubricator in 1872, and he ultimately patented 50 designs that dealt with lubricating systems. The authenticity of McCoy's lubricating cups is rumored to be the origin of the phrase "the real McCoy".



INVENTOR BIOGRAPHIES



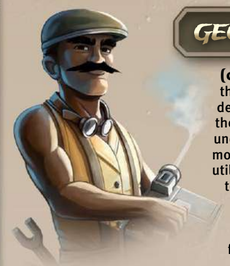
MARIE CURIE

(1867-1934) Born into poverty as Marie Skłodowska in Russia-controlled Warsaw, Curie left Poland to study at the University of Paris where she began her investigations into radioactivity. Through years of painstaking chemical processing, she discovered and proved the existence of Radium and Polonium, shattering the scientific assumption that the atom was the smallest unit of matter. She overcame xenophobic and sexist vilification to win two Nobel prizes, then offered to have both medals melted down in order to help the war effort in WWI, in which she also performed as a field medic. Sadly she would not live to see her daughter Irene also win a Nobel prize; Curie succumbed to leukemia caused by a lifetime of experiments in radioactivity.



LISE MEITNER

(1878-1968) Born into a Jewish family in Austria as Elise, Meitner later shortened her name. She worked on radioactivity and nuclear physics, was the first woman to become a full professor of physics at Berlin University, and was part of the team that discovered nuclear fission, an achievement for which her colleague Otto Hahn was awarded the Nobel Prize. She administered x-rays to wounded Austrian soldiers in WWI. Later, she moved to Sweden to escape the Nazi party and was active at Siegbahn's Nobel Institute for Physics at the Swedish Defence Research Establishment (FOA) and the Royal Institute of Technology. There, she participated in research on R1, Sweden's first nuclear reactor. Meitner refused an offer to work on the Manhattan project, declaring "I will have nothing to do with a bomb!"



GEORGE WASHINGTON CARVER

(c. 1861-1943) Born a slave and granted freedom with the Civil War, Carver wandered Missouri from a young age, determined to acquire knowledge so he could improve the world. Researching and teaching for 47 years at the underfunded Tuskegee Institute made him adept at making the most of minimal resources. He marketed dozens of products utilizing peanut oil and sweet potato, spurred improved farming techniques, and made forays into genetic engineering. Endlessly optimistic, patient and affable, Time Magazine dubbed him the "Black Leonardo." His epitaph reads: "He could have added fortune to fame, but caring for neither, he found happiness and honour in being helpful to the world."



THOMAS EDISON

(1847-1931) Dubbed the "Wizard of Menlo Park," Thomas Alva Edison was a shrewd businessman, letting nothing divert his path of going down in history as one of the greatest inventors of all time, even when it necessitated dangerous experiments to discredit his rival Nikola Tesla. He is credited with the statement "I have successfully discovered 1,000 ways to NOT make a light bulb." Largely homeschooled, Edison went to work at an early age selling newspapers and candy on the Michigan railroads, and became an apprentice telegraph operator after saving the life of a station agent's son. He would go on to accrue more than 1000 patents over his lifetime. Despite a hearing impairment from an early age, Edison's ingenuity, combined with his business savvy, made him a force to be reckoned with.

NIKOLA TESLA

(1856-1943) Arch-rival of Thomas Edison, Tesla was a mad genius. Hailing from Serbia, his notions of death-rays, earthquake machines, and alien communication devices terrified and enthralled the masses. His quest for free electricity for all humanity terrified businessmen, who repeatedly hindered his projects to improve the world. Simultaneously a recluse and a showman, his mystique was matched only by his strange intuition; he claimed that flashes of light revealed to him the workings of nature and theoretical machines. Though he associated with such luminaries as Mark Twain and Antonín Dvořák, Tesla largely shunned human companionship, instead sharing perhaps his deepest connection with a street pigeon.



MARGARET KNIGHT

(1838-1914) Never formally trained, Knight was around machines from the young age of 12 when she started working at a cotton mill, developing strong mechanical intuition. In 1868 she invented a machine that folded and glued the famous paper shopping bags that we still use today. While an iron model of her machine was being constructed, a man named Charles Annan stole and patented her design. Her victory in a patent interference lawsuit against him made her one of the first women to receive a U.S. patent. Her many other inventions included a numbering machine and various devices relating to rotary and internal combustion engines. In total she held 87 patents and was awarded the Decoration of the Royal Legion of Honour by Queen Victoria in 1871.



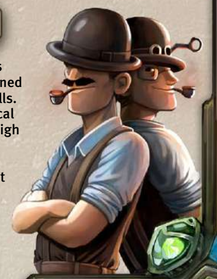
SAKICHI TOYODA

(1867-1930) Known as the "King of Japanese Inventors" and the Father of the Japanese industrial revolution, Sakichi Toyoda was born the son of a humble carpenter. He developed the wooden hand loom, founded Toyoda Industries, and developed a troubleshooting concept still used today called the "5 Whys," a question-asking technique used to illuminate the root cause of technical problems. A recession led him to take a trip to Europe and America where he saw the enormous potential for automation and was inspired to convince his son Kiichiro to found the subsidiary company Toyota Motor Corporation, which now produces one 21st century automobile every 6 seconds.



WRIGHT BROTHERS

(Wilbur c. 1867-1912 – Orville c. 1871-1948) Collaborators and business partners from a young age, the Wright Brothers gained a competitive advantage by boasting a set of complementary skills. Orville's imaginative flights of fancy and Wilbur's shrewd, practical mind made them an unstoppable duo. Neither brother finished high school. After working in the print industry for several years, they opened a shop for manufacturing their own brand of bicycle. The Wright Cycle Company provided them with enough capital to start exploring aeronautics, and they were credited with inventing, building, and successfully flying the first controlled, powered, and sustained heavier-than-air human flight on December 17, 1903, a tremendous leap towards the age of air travel.



QUICK REFERENCE

OVERVIEW

THE GOAL

The goal is to be the inventor ***furthest past the finish line*** at the end of the final round.

PHASES

Every round consists of the following phases:

DRAFT PHASE: Attach machine parts to your invention; sell machine parts to gain dice or cogs; stash boost cards.

VENT PHASE: Discard cogs to subtract pips from dice placed on your machine parts; play "vent phase only" boost cards.

RACE PHASE: Roll the dice in your dice pool, then: activate machine parts for their effects; flip your light bulb token ; discard cogs to increase or decrease the pips on your dice.

DAMAGE PHASE: If your damage gauge is below 0, discard an equal number of machine parts and reset it to "0."

UPKEEP PHASE: Place dice on storage die slots ; reset your light bulb token ; flip the draft direction token or resolve event cards; return unused dice to the general supply.

RACE EFFECTS

GAIN A DIE

Take a die of the specified color and add it to your dice pool. Fusion dice may be placed on any die slot but cannot be vented.

DISCARD A DIE

Remove a die of the color from a die slot on your invention.

TAKE DAMAGE

Reduce the value on your damage gauge by 1.

INFLICT DAMAGE

Cause 1 damage to all other inventions in your space on the track. If the icon has arrows to the left or right, the damage is also done to all inventions behind or ahead of you on the track.

REINFORCE INVENTION

Increase the value on your damage gauge by 1.

GAIN A COG

Take a cog from the general supply.

MOTION

Move forward 1 space, taking damage from terrain.

SMOOTH MOTION

Move forward 1 space, ignoring terrain.

TRACK FEATURES

TERRAIN

When moving forward, take the damage shown on the terrain symbol .

TRAPS

When moving forward, either take the damage shown on the trap or discard the indicated type of die. Cannot be ignored using smooth motion.

CANALS

When moving forward, canal spaces require either 2 motion generated from a single machine part activation or 1 smooth motion to enter.

If you end the **Race Phase** in a canal space you may discard a / / from a die slot on your invention.

FUSION FACTORIES

When in a fusion factory space, you may gain fusion dice by discarding 2 cogs for each die.

CHALLENGE TILES

See **Crowd Tiles** and **Original Challenges**, p. 10 for information about specific challenge tiles.



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