Welcome to

REMediate!

A card game for 2-6 players

The aim of the game is to clean up the environment by remediating plastic and recycling it, but don’t be fooled, this isn’t just a walk in the park with a litter stick and a trash bag. You will be competing in a high stakes, survival of the fittest fight against other microbes to be the best little microbe you can be!

Before you start: The game takes up a reasonable amount of space, so don’t go trying to play it on a tiny little coffee table or something. Give it some room to breathe.

PLAY AREA SETUP

**Step 1: Choose your fighter!**

At the start of the game each player chooses a microbe. This can either be at random, or you can choose based on favourites. Place your microbe card face up in front of you. Your microbe will have a special ability that gives it a distinct advantage over the others. Make sure you understand and use your ability where applicable.

**Step 2: Fill the gene pool**

Shuffle all the genes together and place them in a stack, face down, in the centre of the play area. This is called the gene pool.

Deal four genes from the gene pool to each player. This is your hand. These cards should be held in your hand and kept secret from other players.

**Step 3: Determine the environments**

Shuffle all the environment cards together except the laboratory (right). Draw two environment cards and place them face down next to the gene pool. Place the laboratory card face up on top of your chosen environments. The laboratory is the first environment you will encounter.

On the environment card you will see a number at the bottom left corner. This is the total plastic found in that environment. Draw that number of plastic cards (20 for the laboratory) and place them face up next to the environment. Put the rest of the plastic cards face down next to this pile.

Place the recycle cards in three neat piles next to/below the gene pool as seen in the picture below.

---

Figure 1 - A typical play area setup for 4 players
TURN SEQUENCE AND ACTIONS

The person with the best posture goes first (or however you want to decide, I’m not your mother).

Each player performs three actions during their turn, in order.

1. **Draw a gene.**
2. **Clone a gene into your microbe.**
3. **Remediate OR Recycle.**

**Draw a gene** from the gene pool and add it to your hand. Genes in your hand are not considered in “play” and cannot be used or affected by other genes until they have been cloned into your microbe.

**If you have a truly deplorable set of genes in your hand, you may choose to discard all the genes you have and draw the same amount from the gene pool. If you do this, you forfeit the rest of your turn and you cannot Clone, Remediate, or Recycle. To be honest though, if your hand is really bad, it’s probably worth it.**

At the end of your turn, you may have no more than 4 genes in your hand. If at the end of your turn you have less than 4 genes in your hand, you do not redraw back up to the hand limit but continue with the reduced number of genes.

**Clone a gene into your microbe** to give it extra abilities. Make sure you choose wisely, because if you change your mind then too bad, there’s no takesies-backsies.

There are five main gene types, and you may have only ONE of each gene type cloned into your microbe at a time, to a maximum of five genes.

- **Remediation Genes** – help you to remEDIATE plastic from the environment.
- **Support Genes** – Give different boosts that help you achieve more in the game.
- **Attack Genes** – I think this is pretty self-explanatory.
- **Defence Genes** – Protect against attacks… duh.
- **Resistance Genes** – help you to avoid the hazards from different environment cards.

To clone a gene into your microbe, place a gene from your hand **face up** next to your microbe. Once cloned into your microbe, the action of the gene can be used.

If you wish to add a gene type that you have already cloned into your microbe, you will need to replace the old gene with the new gene. The old gene is then placed in the discard pile, **face up** next to the gene pool (see fig 1).

If the gene pool is depleted, shuffle the discarded genes, and restart the gene pool.

**Remediate OR Recycle.** After all actions from genes have been resolved, the player can choose to either Remediate or Recycle. If you are unable to Remediate or Recycle, your turn is ended. If you don’t want to do either, then that’s your choice. It’s a stupid choice, but it’s still your choice.

**Remediation** is the removal of plastic from the environment. This is done by drawing plastic cards from the pile next to the environment card and putting them in your stash. The amount you can remediate is based on the Remediation Genes you have cloned into your microbe, in combination with any Support Genes which boost your base remediation. If you do not have any Remediation Genes, you are unable to remEDIATE plastic from the environment. Support Genes that support remediation only work when you have Remediation Genes. You can’t use them to remEDIATE by themselves, that’s why they’re called Support Genes.

If the environment changes before you have remediated all the plastic you can, draw the remainder of the plastic from the next environment without penalty or benefit from the new environment. All remediation after that is subject to the hazards of the new environment.

**The James rule:** Keep your accumulated plastic stash on the table so other players can see how many you’ve got. This rule is here because of James. Who cheats. By hiding his plastic.

Instead of remediating, you may choose to **Recycle** some of your plastic into household items. This involves trading some of your plastic cards for a recycle card, which cannot be stolen by any other player and is protected until the end of the game, when it is counted toward your tally of **victory points**. There are three types of recycle cards, each with a cost (in raw plastic) and a worth (in victory points).

You can only trade one recycle card per turn, so there’s no point in storing up all your plastic cards and trying to trade them all in one go. You do that and you’ll end up losing all your plastic when people steal it with Attack Genes. You cannot trade your recycled cards for higher cost recycle cards.

**Do not put recycled plastic back into the environment!** This is called littering and is generally frowned upon. Recycled plastic should be placed **face down** in the extra/discard plastic pile.

**ENvironments**

Each of the environment cards has a set amount of plastic to clean up. This is indicated by the plastic symbol in the bottom left corner of the card.

Some of the environments also have hazards present, such as heat, cold, radiation, or saltiness. These hazards affect your microbe’s ability remediate plastic.
If you do not have a Resistance Gene matching the hazard in the environment currently in play, your remediation is dropped to a MAXIMUM of 1, and Support Genes to increase remediation are deactivated. This remains until an applicable Resistance Gene is cloned into your microbe, or the environment changes to one more favourable.

Once all plastic cards are removed from the current environment, take a moment to appreciate the cleanliness of this pristine environment, then remove the top environment card, turn over the next one, and place a new stack of plastic cards to begin the clean up again in the new environment.

ATTACK AND DEFENCE GENES

Actions on Attack Genes are performed immediately after cloning into your microbe, whether you like it or not. If an Attack Gene states “discard” after use, it is still cloned into your organism as usual, then discarded after the action on the Attack Gene has been performed. Attack genes are always cloned into YOUR microbe unless the gene card states otherwise.

Applicable Defence Genes that are already cloned into the microbe are automatically used upon being attacked by an Attack Gene. They cannot be used unless they are already cloned into the microbe. If you forget that you have a Defence Gene, and no one else notices before the next player begins their turn, then you continue play without using that card. If ANYONE notices the Defence Gene, it must be played, even if you’ve already swapped plastics/genes etc, too bad! Roll it back!

If your Attack Gene is blocked by a Defence Gene, there is no taking it back! Discard the Attack Gene and the Defence Gene. And don’t complain how unfair it is, you should have been paying closer attention to what genes the other player had.

ENDING THE GAME

The game ends when all the plastic has been remediated from all 3 environments (or when someone loses it and flips the table, but this is frowned upon). Tally up the victory points from your recycle cards, and the unrecycled plastic in your stash. The player with the most points wins!

If there is a tie, then congratulations! You’re both winners!

If you are a highlander and live by the code “there can be only one”, then each of the highest scoring players should draw genes from the gene pool one at a time. The first to get a Remediation Gene is the winner. But come on, the game is about cleaning up the environment. Are you really going to be that petty?

ALTERNATE RULES

For a one-hour game, use a total of three environments (including the laboratory). If you want to play for longer, or shorter, just adjust the number of environments to suit. Each environment lasts for around 20 minutes, but it does depend on a lot of other factors, so it’s not precise.

FAQS

Genes discarded at change of environment: When an environment is changed, it is only cloned genes that state “discard on environment change” that are discarded. Any genes in your hand, or genes that do not have this statement are not discarded.

Stealing plastic: if you steal plastic from another player as an attack then this is considered part of the attack and not a remediation action, so you can still either remediate or recycle if you are able to.

Gene actions: Once a gene is cloned into your microbe it’s action can be used immediately. BUT – if you are cloning a gene involved in drawing gene cards, that part of your turn ended as soon as you started cloning. Too bad, so sad, you’ll have to wait until next round to use it.

Quorum Sensing: With this gene, you choose another gene to mimic. If the original gene that is being mimicked is discarded, the Quorum Sensing gene continues to mimic the discarded gene. It is on your head to remember what that mimicked gene is, and if you forget, or even stumble for a minute trying to remember, that gene is then discarded.

Chemotaxis: If two players have the same number of plastic cards, the player who is attacking gets to choose who they will take the plastic from.

B. Subtilis: Choosing which type of resistance you want can occur at any point in the game. Once it has been chosen, it cannot be changed. If the player is caught changing it to something else, this is called cheating and the player is no longer resistant to any hazard for the rest of the game, even if they have a resistance gene cloned into their microbe.

Terephthalate Sensitivity: When played, this Attack Gene is cloned into the microbe you are attacking, replacing any Attack Genes they already have cloned. This attack can be blocked with an appropriate Defence Gene, but if it’s successfully cloned in, it cannot be removed (e.g. by cloning in another Attack Gene or using a subsequent Defence Gene) until there is a change in environment. However, if a Toxin Secretion attack is made against a player with Terephthalate Sensitivity, it can be chosen as the gene to remove.

Transposition: if you clone this gene into your microbe, it is immediately activated, meaning you can immediately clone in another gene if you want to. You are still restricted to only one gene of each TYPE, unless your microbe allows for more.

Chemotaxis: If you clone this gene and the person with the highest number of plastics has a storage granule gene, then you have wasted this card, sorry, not sorry. If there is another player with the same number of plastic cards, you can choose to attack this player instead. Otherwise, the gene is discarded as it has technically been played.

ABOUT THE CREATORS

Remediate! is brought to you by scientists and outreach team from the ARC Centre of Excellence in Synthetic Biology. In between doing some pretty awesome science, Jonathan “Gut” Berengut and Danielle Rudler designed the artwork and collateral, Eric Jenner, Taylor Szyzskza and Skye Young formed the powerful game mechanics team, Luke Rees produced the trailer video while J-L Heylen, Sally Yukiko and Mary O’Malley organised all the events around the game. We had a lot of fun making it and we hope you have fun playing it!