

# Power Core Values

## Teaching Guide

By STEMspire



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# Introduction

Hello! If you are reading this, that means you are most likely considering running our game in your classroom. Before we get started, here is a bit of background on the team, the game, and the purpose of this guide.

STEMspire is a group of Entertainment Technology Center students working on a semester-long project for the Collaboratory Against Hate. We were tasked with creating a game that, alongside a teacher run workshop, will raise awareness among 8th graders about racial bias in STEM fields.

The game we have created is *Power Core Values*. The game seeks to engage the player in the story and minigame while giving workshop facilitators examples of racial bias that can be pulled from the game and used as discussion points. This game is designed to be used in concert with a workshop to spark conversations about racial bias.

After discussions with educators about the workshop's content, we realized that each person brought unique ideas about activities to run and questions to discuss that were all effective in their own way. Therefore, instead of having step by step instructions that should not be deviated from, we wanted to open it up to you, the facilitator, to build a workshop tailored to you and your students' specific needs.

We at STEMspire came up with some of the activities and wrote the initial draft of the Teaching Guide. We then sent it to the educators present at the workshop to get feedback and approval.**[Pending]**

The purpose of this guide is to help you find the areas of the game that hold potential lessons, explain what the lessons may be, and give you examples of potential activities and discussions, including some that came from our discussions with educators. Feel free to use this guide as you see fit. Good luck!

– STEMspire



## Project Aspirations

While *Power Core Values* is intended to provide a facilitator with the flexibility to tailor their workshop's discussions to their specific needs, the following key points are what we wish for the students to take away from this experience:

- How to identify racial bias in interactions with others.
- The understanding that not all racial bias is intentional and that unintentional racial bias can be as hurtful as intentional bias.
- If you don't try to stop or correct instances of racial bias, you bear some responsibility for its continuation.
- Taking responsibility for your actions or inactions is a step towards alleviating the damage caused by racial bias.
- Bias is present in places you don't expect, including in the technology, interactions, and environments of your day-to-day life.

# Game Information

Game link: <http://powercorevalues.etc.cmu.edu/>

## Story Outline

The player is the captain of a spaceship. Their ship just got hit by an asteroid so they need to dock at a nearby space station for repairs. The player's robot companion, R.C., says that they need expert help to repair the ship.

While searching for an expert, they are stopped by Zun, who asks if they need help. After the player explains the situation, Zun reveals that they are actually an engineer and offers to take a look. R.C. interrupts, stating that Zun doesn't fit the profile of a "qualified engineer" and offering little explanation. The player listens to R.C., and goes to look for someone else.

After exploring the space station some more, the player finds Nanoi, another engineer. R.C. is satisfied that Nanoi will be able to help, so, after a brief conversation, the player leads Nanoi to the ship.

Nanoi is able to fix part of the ship, but mentions that the player needs someone specialized to fix the power core. R.C. doesn't believe Nanoi and starts the ship anyways, leading to the power core failing. When Zun is brought up as an expert to ask, R.C. refuses, leading to a confrontation. This leads to R.C. being either silenced or ordered to stay behind.

Now that R.C. is no longer an issue, the player can go talk to Zun, who is unsure about helping until the player apologizes. Zun is able to fix the power core and, after an opportunity for the player to own up to their mistakes, the player leaves the space station and the game ends.

Additionally, there are additional interactions available to the player throughout the storyline, but are not required for game completion.

## Examples of Bias in the Game

The examples of racial bias are focused in two places, the environment and the dialogue.

### Environment

#### Posters

The posters in the environment are examples of representational bias. Traditionally, representation has been unequal in popular media, advertisements, and the teaching of history.



It should be noted that R.C.'s racial bias doesn't emerge from a vacuum, but is shaped by the information it is exposed to. The different aspects of the environment including signage, posters, and upkeep can be discussed in regards to what might have led R.C. to develop racially biased opinions.

Representation bias occurs when the data that is used to train an AI like R.C. is skewed to one particular group over another. For example, when teaching an AI what an engineer is, the data used may include a higher percentage of white men in comparison to other groups. A similar

phenomenon is seen in the game where engineers and innovators are overwhelmingly represented by pink individuals, leading R.C. to conclude that engineers should be pink.

If R.C. was also created by a pink innovator (as is suggested by the environment), then that is another source of bias, contributing to R.C.'s incorrect judgements.

### General Environmental Conditions

The environmental conditions show unequal access of resources on the space station. One area of the space station, the “Main Commercial District,” seemingly receives more upkeep in comparison to the other area of the station, the “Side District.” Other signs of unequal access include the lack of amenities, such as outdoor seating or plant life, in the Side District.

Students should notice that most of the purple characters are in the less well-maintained Side District, while most of the pink characters are found in the well-maintained Main Commercial District.



*The Side District*



*The Main Commercial District*





## Using the Environment for Discussion

You may wish to discuss different aspects of the environment during the workshop. While environmental aspects may be mentioned in connection with other topics mentioned later in this document, they can also be discussed separately.

You can begin with simply asking the students what they noticed and observed throughout the game. Open it up for the students to respond or consider questions such as:

- Did they see any of the posters in the scene?
- Are there any disparities in living conditions between one area and another?
- Where were the pink individuals gathered versus the purple individuals?
- Did they identify any sense of wrongness about the environment?

From there, you can connect the act of observing an in-game environment with the act of observing a real world environment. No environment is neutral, whether that is in-game or in real life. Have students consider questions such as:

- What do they notice? What do they observe?
- Do they notice similar things to what they noticed in game?
- What values do they attach to that observation?
  - Note that noticing differences and attaching value to those differences are two different things.

## Dialogue

### Main Storyline

The conversations contained in this section must be completed by the player in order to finish the game.

A pivotal component of the main storyline is the artificial intelligence bias demonstrated by R.C. (the player's robotic companion). R.C.'s biased actions hinder the player's progress through the game, preventing players from seeking the help of qualified individuals such as Zun.

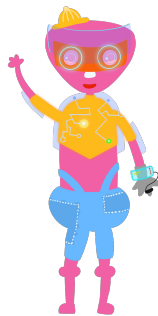
However, it is also important to understand that R.C.'s biases don't arise from a vacuum. R.C. is taking in biased data and using that data to make equally biased assumptions. In turn, this biased data is a result of a society that favors one group over another despite the lack of any real difference between the two groups.

### Meet Zun

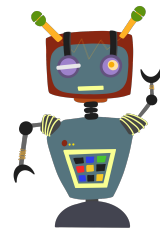
As the player walks through the Side District, they are stopped by Zun, who reveals they are an engineer and offers to help fix the ship. R.C. refutes this because Zun does not fit the profile of a "qualified engineer."



*Zun*



*Nanoi*



*R.C. (Robot Companion)*

### R.C. Starts Ship

Nanoi is able to fix some of the ship, but other repairs require specialized knowledge that Nanoi doesn't possess. R.C. insists that Nanoi should be able to complete all the repairs if able to see the ship in action. Thus, R.C. starts the ship.

### Argument with R.C.

When asking Zun or looking for help in the Side District is suggested, R.C. protests the idea. When asked to explain its reasoning, R.C. gives a flimsy answer, insisting that neither Zun nor the Side District fit the correct profile.

## Side Dialogues

The conversations in this section aren't required to complete the game. Therefore, some students might not experience these sections. However, they still offer valuable examples of racial bias.

### Customer Service Representative

The first NPC (non-playable character) that the player can talk to after arriving at the spaceport is the **Customer Service Representative**.

The player has the ability to ask the Customer Service Representative if they know anyone who can fix their spaceship. The Customer Service Representative will refer the player to Nanoi, even though Zun is equally qualified and closer to the player.



*Customer Service  
Representative*



*Bot Enthusiast*

### The Bot Enthusiast

In the Side District, the player has the option to talk with the **Bot Enthusiast**.

In the first encounter with the Bot Enthusiast, R.C. will cut the Bot Enthusiast off, stating that the conversation is a waste of time. In conversations with pink characters, R.C. will not interrupt those characters if they venture off topic.

Later, the Bot Enthusiast reveals more information about R.C. in the Bot Enthusiast follow-up conversation.

### The Bot Enthusiast Follow Up

After arguing with R.C., the player can talk to the **Bot Enthusiast** again for new dialogue about R.C.

The Bot Enthusiast points out that R.C. is a robot that was programmed to act in a certain way by people who may have subconscious biased beliefs, or trained on data with unintentional bias undertones. R.C. isn't singular in its behavior and is only one component of a larger systemic problem.

### The Guardian and the Eager Kid

In front of the Museum of Space Exploration in the Main Commercial District, the player can speak with the **Guardian** and the **Eager Kid**. The pair have just left the museum.

The Eager Kid is excited about the museum exhibits (which include the 100 Greatest Innovators) and expresses interest in being an engineer, hinting at the importance of representation in encouraging kids to pursue STEM careers.



*Guardian*



*Eager Kid*



*100 Greatest Innovators*

### The Proud Parent and the Diligent Parent

Two restaurant patrons in the Main Commercial District are having a conversation the player can overhear. These are the **Proud Parent** and the **Diligent Parent**.

The parents' kids both applied to the same college, Galactic Center Tech. The Proud Parent's child was accepted into the college, while the Diligent Parent's child was not. As both parents are seated in the Main Commercial District, they are likely of a similar socioeconomic class, demonstrating that racial bias can occur regardless of class.



*Proud Parent*



*Diligent Parent*



*Galactic Center Tech*

# Workshop Information

## Recommended Schedule

Although we are leaving the workshop format open for you to determine, we have designed the game anticipating the following schedule:

1. **[Optional]** Short introduction consisting of 1 or 2 sentences. There are two ways in which you can present this game.
  - a. **[Recommended]** The Discovery Path: Tell the students that this is a game about problem solving. Let them know that on the way to solve the main problem, they might encounter other problems and issues.
  - b. The Direct Path: Tell the students up front that the game is about bias.
2. Play the game. We suggest students play individually or pairs. It is recommended to allow or encourage quiet discussion amongst the students about the game's events.
3. A lesson on racial bias, consisting of an activity and/or a discussion. Included in this guide are ideas for activities and discussions that you can have with students.

## Example Activities

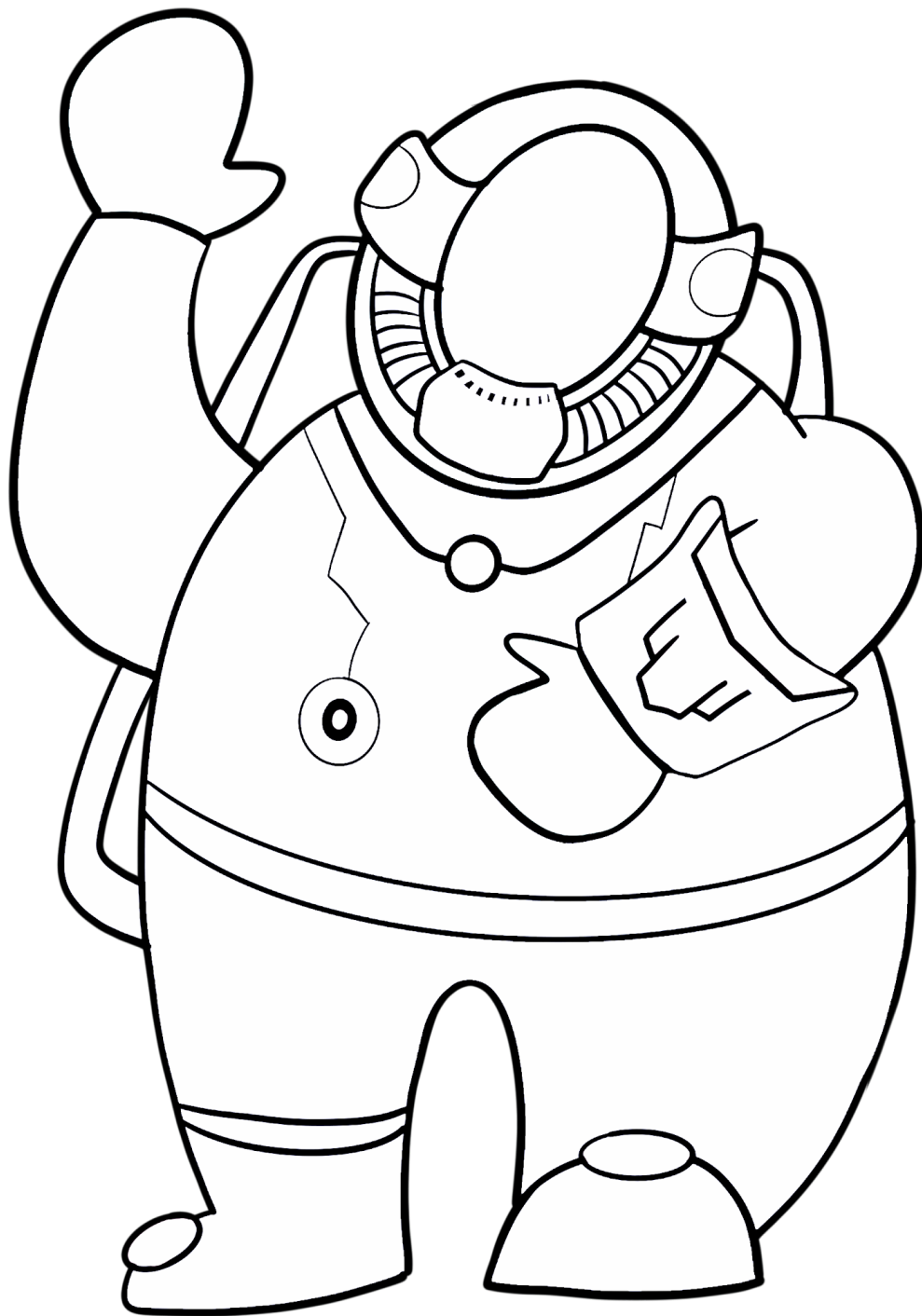
### Under the Suit

#### Materials

- Paper or print out (provided on next page)
- Drawing utensils (Specifically purple or pink)

#### Instructions

1. Pass out materials to each student.
2. Remind the students that all of the characters except R.C. are either pink or purple. However, the Captain (the player character) has their appearance concealed by their space suit.
3. Ask the students to draw what they think the Captain (the player character) looks like under the space suit.
4. Give the students time to draw their Captain.
5. Have the students show their finished Captain. What color did they make their Captain?
6. Discuss how the story might change if the Captain was visibly pink or visibly purple. If they choose different colors, talk about how the addition of a new color might make the story different.
7. Discuss how noticing that people are different is not racist. Having values assigned to different types that are faulty values - mistakes in the value judgments - is when racial bias occurs.



## Into the Fold

### Materials

- Nanoi and Zun cards (provided on next page)
- List of situations

### Instructions

1. Print and cut out the Zun and Nanoi cards.
2. Give each student a Nanoi card and a Zun card.
3. Explain to the students that you will be listing out several situations that happened in the game. For each situation, have the students fold the card of the character they think was hurt; Nanoi, Zun, both, or neither. The verb "hurt" is intentionally left vague and to the student's judgment here.
4. Read the list of situations, pausing to let the students fold after each situation. You can use or edit the example list below, or come up with your own list.
5. Once you have gone through the list, have the students look at their cards. Ask them to smooth the cards out as best they can.
6. Explain that the creases in the paper are the hurts a character experiences when they are subjected to bias. Smoothing the paper out represents actions we can take to address racial bias in our life and our communities. These actions can help heal some of that hurt, but the hurt doesn't go away completely.
7. Explain that every student's cards may have a different number of folds. Talk about how hurt can mean different things to different people and people aren't wrong to feel hurt just because you don't understand why they feel that way.

### Example Situation List

- R.C. interrupting Zun when Zun is speaking
- R.C. refusing to let Zun help repair the ship
- The 100 Greatest Innovators poster outside the museum
- R.C. insisting Nanoi can fix the ship even though Nanoi doesn't know how to fix it
- The two parents discussing their kids' different college acceptance outcomes
- The customer service representative referring you to Nanoi instead of Zun
- R.C. interrupting the Bot Enthusiast when the Bot Enthusiast is speaking

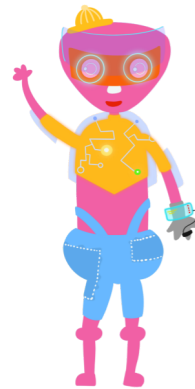




Nanoid



Zun



Nanoid



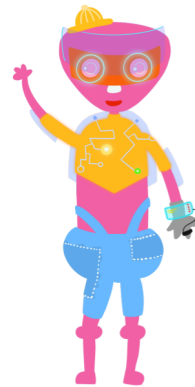
Zun



Nanoid



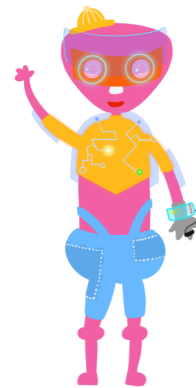
Zun



Nanoid



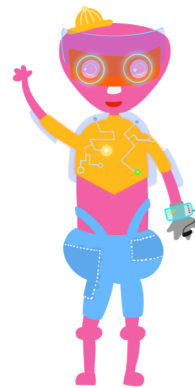
Zun



Nanoid



Zun



Nanoid



Zun

# Discussion

## Discussion Questions

Presented below are questions you can discuss with your students. You can read these prompts directly from the list, or change the wording as you want.

### Questions

- The game establishes that R.C. stands for robot companion. Based on the events of the game, what else do you think R.C. stands for?
  - If no answers are forthcoming, you can give them the example Reality Controller.
- At the beginning of the game, we trust that R.C. is always correct, but it turns out that its beliefs are biased, causing harm to other individuals and making things harder for us. While we don't have a personal robot in our real lives, we all have someone or something we trust that might be feeding us biased information in the same way R.C. does.

Who or what is the R.C. in your life?

- Examples of possible R.C.s:
    - Youtube
    - TikTok
    - Google
    - The news
  - Follow up questions:
    - Where does your R.C. show up in your life?
    - What is your R.C. pushing you to do or believe that might be incorrect?
    - What information is your R.C. missing?
    - How can you help it get that information?
  - **Note:** *This is a more personal question intended for reflection. Depending on context, you can ask if any students would like to share, but it is not a necessity.*
- What would you change about the events in the game if you could?
    - Examples:
      - Bring Zun back to the ship earlier.
      - Reprimand R.C.
      - Send R.C. back to the ship earlier.
      - Add Purple aliens to the innovator's poster.
      - Have customer service mention Zun.
  - Why do you think R.C. thought the way it did? Can you think of any sources that might have contributed to or reinforced R.C.'s biased beliefs?
    - This is an area where the posters and the conversation with the customer service representative can be mentioned, either by the student or the facilitator.

- Follow up:
  - Do you think there are similar sources in the real world? Can you name some examples?

## Discussion Topics

These are general topics of discussion that can be covered. You should think about how to introduce these topics to the students.

### Topics

- There are several instances in the game where the player can take responsibility for the part they played in the way Zun was treated, or they can choose to place all the blame on R.C.

Use these instances as an opportunity to talk about how inaction can also hurt others. Even if you're not the person doing hurtful things, ignoring or catering to those actions encourages those actions and communicates to the person being hurt that you don't care about the damage that those actions cause.

- Use R.C. as a starting point to talk about how many people believe everything they learn from technology. While technology may seem infallible, technology can make mistakes or propagate hurtful ideas, just like the people that made it
- Help the students understand that every human has some form of bias. Discuss when a bias might be harmless and when it might become a problem.
- Oftentimes topics like racial bias are avoided because people are afraid their audience will misinterpret observations for prejudice and vice versa. The audience may also sometimes misinterpret such statements, leading to arguments.

Discuss the difference between observational statements (e.g. "There are Black people in this room.") and biased or prejudiced statements (e.g. Microaggressions such as "You're Asian? You must be good at math."). Talk about how observational statements are important for discussions, while prejudiced statements are not okay.

## Additional Resources

[So You Want to Talk about Race by Ijeoma Oluo, Paperback | Barnes & Noble®](#)

A book that provides an example on how to educate people about racial bias without putting them on the defensive.

[Spent](#)

A game about economic inequality.

[Algorithmic Justice League](#)

An organization trying to raise awareness about the existence of AI bias and the harm it causes.

[A Class Divided \(full documentary\) | FRONTLINE](#)

Jane Elliot's Blue Eyed, Brown Eyed experiment.

[Nicky Case](#)

Creates educational games.

[Parable of the Polygons - a playable post on the shape of society](#)

A game created by Nicky Case that shows how small instances of individual bias can become magnified by collective bias.

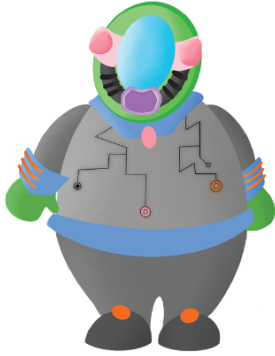
[Body Ritual Among the Nacirema](#)

Large inspiration for this workshop. An article that shows how anything can seem foreign and ridiculous if looked at from a certain perspective. (After reading through the article, read the name Nacirema backwards.)

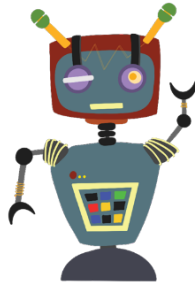
[STEMspire – An ETC Project website](#)

The team website. Records our process making the game, as well as giving more information about the team, and the mission behind the project.

# Character Index



*Player Character*



*R.C. (Robot Companion)*



*Nanoi (Engineer)*



*Zun (Engineer)*



*Customer Service Representative*



*Bot Enthusiast*



*Proud Parent*



*Diligent Parent*



*Guardian*



*Eager Kid*

# Credits

The ETC students and faculty who helped work on this project are:

James Finkel — Co-Producer, Game Design, Programming

Angelina Shi — Co-Producer, Environmental Art, Narrative Design

Hannah Baxter — Narrative Design, Teaching Guide Writer

Phoebe Wang — Lead Programmer

Yuchan Wu — UI/UX Designer, Character Artist

Mike Christel — Faculty Advisor

Ricardo Washington — Faculty Advisor

Ruth Comley — Faculty Mentor

John Balash — Client Contact

We would like to thank the following people for aiding us on this project as well as the teacher's guide:

Michelle King — Learning Investigator  
LinkedIn: [Michelle King - Learning Instigator, Love Activist & Transformer](#)

Benjamin Walker — Family Advocate for Homewood Children's Village  
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And special thanks to Northgate School for their help with playtesting and hosting the workshop.