

PANIC! AT THE HOUSEHOLD



SETTING THE SCENE

In this game, we tell the stories of five individuals in Kleenville, a fictional suburban neighborhood. We follow these individuals throughout their day, as they navigate making choices in their households and their neighborhood. In the process, they must balance competing values of health, money, time, and effort, while considering exposures to endocrine-disrupting chemicals (EDCs).

While this game hinges on a decision-making framework, *we acknowledge that individual choice is NOT the primary way by which exposure to EDCs is mediated.* This experience seeks to reflect the complex ways individuals are shaped by their material conditions, sociocultural background, and community.

While this game has a points system to track Health, Money, Time, and Effort, the intention isn't to "win" by minimizing point loss. Instead, these point values contextualize the consequences of each choice and highlight the disparities between the groups our characters belong to. This design implies that many of the choices are *not free choices* because they are constrained by the character's circumstances.

OUR GOALS

This experience aims to guide the player through an interactive exploration of the varied ways by which EDCs impact different members of a community, through exposures inside and outside of the household. We aim to synthesize the biological complexity of endocrine disruption with equally nuanced social analysis by discussing the mechanisms underlying the adverse health effects of EDCs, the relative risk posed by different products containing EDCs, and how institutions, stakeholders, and consumers shape and interact with EDCs. Lastly, in the epilogue for each character, we aim to provide insight into their future as well as future directions for specific EDC-related topics covered in that character's storyline.

Our project showcases how the social and biological issues interact in unique ways because each character is intentionally designed to incorporate a mix of different social and biological identities that can either generally increase or decrease their exposure to EDCs depending on the choices made by the player.

WHAT ARE EDCS?

EDCs, or, endocrine disrupting chemicals, are chemicals that are substances in the environment, food sources, manufactured products, and personal care products that interfere with the normal function of your body's endocrine system. Since EDCs come from a variety of sources, people are exposed in several ways, including the air we breathe, the food we eat, and the water we drink. EDCs can also enter the body through the skin (Endocrine Society, 2022).

How we are exposed to EDCs	Where the EDCs come from	EDC example(s)
Oral consumption of contaminated food or water	Industrial waste or pesticides contaminating soil or ground-water	PCBs, dioxins, perfluorinated compounds, DDT
Oral consumption of contaminated food or water	Leaching of chemicals from food or beverage containers; pesticide residues in food or beverage	BPA, phthalates, chlorpyrifos, DDT
Contact with skin and/or inhalation	Household furniture treated with flame retardants	BFRs
Contact with skin and/or inhalation	Pesticides used in agriculture, homes, or for public disease vector control	DDT, chlorpyrifos, vinclozolin, pyrethroids
Intravenous	Intravenous tubing	Phthalates
Application to skin	Some cosmetics, personal care products, anti-bacterials, sunscreens, medications	Phthalates, triclosan, Parabens, insect repellants
Biological transfer from placenta	Maternal body burden due to prior/current exposures	Numerous EDCs can cross the placenta
Biological transfer from mother's milk	Maternal body burden due to prior/current exposures	Numerous EDCs are detected in milk

Abbreviations: BFR: brominated flame retardant; BPA: bisphenol A; PCBs: polychlorinated biphenyls

AND WITH THAT, LET'S GO TO TOWN

As you continue, you will learn about our town and its vibrant community. You will select a character and become one with that character, navigating daily life in Kleenville while taking care of your health, finances, and wellbeing. We hope you enjoy your time in Kleenville.

Sincerely,
The Kleenville Government



KLEENVILLE: THE CITY OF SUBURBAN DREAMS

Welcome to Kleenville. May all your suburban lifestyle dreams come true.

In Kleenville, residents find peace in the predictable streets, lush parks, and lively downtown. Although Kleenville is a suburb, there is plenty to do – both inside and outside of the household! The city of Kleenville frequently hosts community events like carnivals, concerts, and movie nights. People are from all over the world and settle in Kleenville to raise their families and pursue anything from owning a small business to working in the healthcare industry. Kleenville prides itself in its diversity and progressive beliefs.



KLEENVILLE IN NUMBERS

50,682

Population

22.8

Square Miles

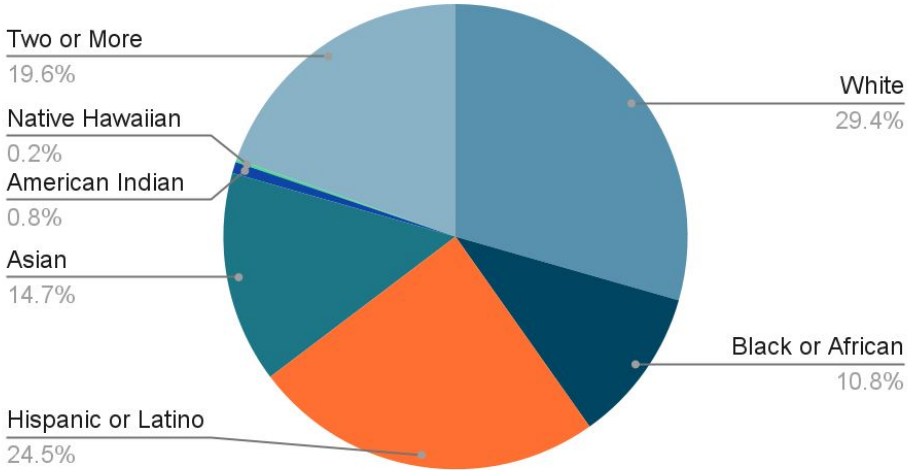
\$89,600

Median Household Income

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DEMOGRAPHICS

Race



DEMOGRAPHICS

AGE

Persons under 5 years	6%
Persons under 18 years	25%
Persons 65 years and over	12%

EDUCATION

High school graduate or higher, percentage of persons > 25 years	75%
Bachelor's degree or higher, percentage of persons > 25 years	36%



CHOOSE YOUR OWN ADVENTURE: THE RULES

CHOOSE YOUR CHARACTER

01

Start by choosing a character to play as

MAKE DECISIONS FOR THEM BASED ON POINTS

02

Help your character make informed decisions with the knowledge you have about EDCs and the time, effort, and money that character has available

EVALUATE HOW PEOPLE ARE AFFECTED DIFFERENTLY

03

Reflect on the how your character was affected by EDCs and play again as another character to compare and contrast



HOW TO USE THE RESOURCE BANK



The choices you make are worth different amounts of Health, Money, Time, and Effort. Consider allocating these resources efficiently when making your choices.

HEALTH



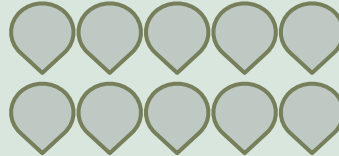
100

MONEY



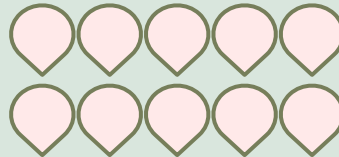
100

TIME



100

EFFORT



100



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HEALTH, MONEY, TIME, AND EFFORT

The values given for gains and losses in the health, money, time, and effort banks are abstractions to convey the relative impact of our characters' choices. We implemented this feature to draw distinctions between each character's circumstances and available choices. Although the point framework conveys a competitive or strategic quality to our game, it is not meant to imply that the choices presented to our characters are 'right' or 'wrong' because the circumstances and needs of our characters, and of all people for that matter, are dynamic and nuanced.

Questions that may be conceptually similar can be posed to two different characters and involve different 'costs' in time, money, and effort for each character depending on their circumstances and backgrounds.



HOW TO USE THE RESOURCE BANK

check your points

go to next choice

RESOURCE BANK

update your points as you make choices!

HEALTH	100
MONEY	100
TIME	100
EFFORT	100

For every choice, your options will have specific point values associated with them. Whenever you see this resource bank, please press “esc” and update your point values accordingly. If playing in person, use this scorecard to manually track your points. If you forget how many points you had, click the check your points button to head to the last resource bank you updated.

Once you are there, click the go to next choice button to update your current points. Please only use this button to navigate between resource banks for different choices.

MEET THE NEIGHBORS

MARK & SIENNA SMITH

Husband & Wife

DR. LINDA BALDWIN

Cosmetic surgeon

JENNIFER NGUYEN

Nail salon worker

PHINEAS FLYNN

2nd grader



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MEET MARK SMITH

Name: Mark

Age: 30

Race: white

Education: Bachelor's Degree in Mechanical Engineering

Occupation: Construction

SES: middle class

Fun facts:

Mark is a 30-year-old man who lives with his wife in Kleenville. His wife Sienna is currently expecting a child! Mark earned a bachelor's degree in mechanical engineering but was having a difficult time finding a job after he was let go from the last company that he worked for. This is how he landed a job with one of the local construction companies. In his free time, Mark enjoys spending time outside hiking and running. He also enjoys cooking and trying new dishes.





MEET SIENNA SMITH



Name: Sienna

Age: 29

Race: Black

Education: 4-year university

Occupation: Homemaker

SES: middle class

Fun facts: Married to Mark Smith and currently 1 month pregnant

Sienna is a 29 year old pregnant woman who is happily married to her husband, Mark who she met in college! While she is currently unemployed, she spends her time at home cooking and cleaning, preparing to welcome her first child. Sienna's hobbies include browsing through fashion content in either magazines, social media, or television.





MEET PHINEAS FLYNN



Age: 7

Race: white

Education: current 2nd grader at John P. Kleen Elementary

SES: middle class

Fun facts: eats glue when bored at school, enjoys sports

Meet Phineas Flynn, a 7-year-old with a wild imagination, which he currently employs as a 2nd grader at John P. Kleen Elementary. Phineas' favorite activities include watching Cocomelon, drawing blueprints for potential inventions, and playing outside. Phineas' mother is a nurse, a job that comes with a sporadic schedule. Phineas' dad is the head chef at a New American restaurant. Phineas's parents are able to comfortably provide for their family, but are not able to spend quality time on a regular basis. Instead, Phineas is often under the questionable supervision of his 10-year-old brother, Flinn.



MEET DR. LINDA BALDWIN

Age: 54

Race: white

Education: M.D./Ph.D.

SES: high socioeconomic status

Fun facts: obsession with anti-aging and looking young

Dr. Linda Baldwin completed her undergraduate studies at USC and proceeded on to UCLA for her M.D. and Ph.D. She has her own practice in Beverly Hills and now offers her services for highly specialized operations like implants, cosmetic skin grafts, and liposuction and as well as more minor cosmetic services such as botox, threading, fillers, etc. She has a slight obsession with aesthetics and the upkeep of her appearance and thrives in a life of luxury.





MEET JENNIFER NGUYEN



Age: 45

Race: Asian

Education: High school diploma,
cosmetology license

SES: Low income

Fun facts: Loves painting and art, has
chronic lower back pain

Jennifer “Jenny” Nguyen is a 45 year old woman living in downtown Kleenville who works as a full time nail technician at a mid-sized nail salon, Kleen Sets and Toes, in her neighborhood. The salon, prior to the COVID-19 pandemic, was family owned and operated. Jenny’s mother’s cousin and his wife started the business, but were effectively forced to sell it to a larger franchise in 2020 when their rent was exorbitantly increased after renovation. Jenny is a highly skilled nail technician with almost 30 years of experience. Because she has worked this physically demanding job consistently since she was a teenager, Jenny has developed chronic back pain. She and her partner have been together for 10 years and have a 7-year-old french bulldog named Otis.



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CHOOSE YOUR CHARACTER!

MARK SMITH

DR. LINDA BALDWIN

JENNIFER NGUYEN

SIENNA SMITH

PHINEAS FLYNN



Once you have selected a character, please make a copy of their slides if you plan to edit the resource bank directly on the slides.

MEET THE AUTHORS



BRYAN ARREOLA



OLIVIA BIELSKIS



ALYSSA HESTON



MEGAN BORDA



ANISHA CHANDRA

Click on each author's name to learn more about them!

BRYAN ARREOLA

Year: 4th

Major: Human Biology and Society

Minor: Science Education

Career Interests: Pediatrician or Teacher

Hometown: San Fernando Valley, CA

Fun Fact: I used to have a peanut allergy but I got over it.



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MEGAN BORDA

Year: 4th

Major: Human Biology Society

Minor: Global Health

Career Interests: Physician Assistant

Hometown: Bakersfield, CA

Fun fact: I have three dogs at home.



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OLIVIA BIELSKIS

Year: 4th

Major: Human Biology and Society and Political Science

Minor: Brain and Behavioral Health Sciences

Career Interests: Public interest attorney

Hometown: Walnut Creek, CA

Fun Fact: I've broken my left arm 3 times.



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ANISHA CHANDRA

Year: 4th

Major: Human Biology and Society

Minor: Food Studies

Career Interests: Physician and/or writer

Hometown: Sunnyvale, CA

Fun fact: I talked to Neville Longbottom once.



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ALYSSA HESTON

Year: 4th

Major: Human Biology and Society

Career Interests: Surgery

Hometown: Irvine, CA

Fun Fact: I do not own jeans.



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REFERENCES

Endocrine-Disrupting Chemicals (EDCs). (2022, January 24).

<https://www.endocrine.org/patient-engagement/endocrine-library/edcs>

