



CONE-SCIOUS

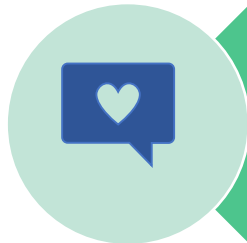
Project Robin Hood

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IDEA DEVELOPMENT



Research: Equity in experiencing technology
Accessibility settings



Need to be fulfilled: Colour Blind Filters/ Awareness



Game idea: Educational Piece + embedding accessibility

Using the MakeCode platform https://makecode.com/_8Dh5orbV2

A person with "normal" color vision can see all combinations of the three additive primary colors — red, blue, and green — in their true form. https://makecode.com/_0cEdeE

Could we use this to 'reward' our player (?) collect to be able to see better/ learn more.

Your ability to see colors is dependent on three genes: **OPN1LW**, **OPN1MW**, and **OPN1SW**.

CONE CELLS SUBTYPES

Deuteranopia	Protanopia	Tritanopia
<ul style="list-style-type: none">Refers to RED/ GREEN colour blindnessCongenital condition / meaning you are born with it.Difficulty seeing different shades of red, green and yellow.It's estimated that red-green color vision deficiencies occur in 1 out of 12 men and 1 out of 200 women, according to the UK National Health Service. <p>K</p>	<ul style="list-style-type: none">colour blindness resulting from insensitivity to red light, causing confusion of greens, reds, and yellows. It is hereditary, and is the commonest form of colour blindnesshave either defective long-wavelength cones (L-cones) or the L-cones are missing at all <p>W</p>	<p>https://makecode.com/_XpDE9z9t4Vgm</p> <p>Refers to BLUE/ YELLOW colour blindness</p> <ul style="list-style-type: none">the cones of the eyes that are sensitive to short wavelengths (S-cones) are missingthere are 2 forms of blue-yellow colour blindness:<ul style="list-style-type: none">Tritanopia: difficult to distinguish between colours containing blue or yellow, such as green and blue or and purple and red. Individuals with tritanopia are missing their S-cones.Tritanomaly: difficult distinguishing between green and blue, and red and yellow. Individuals with tritanomaly have defective S-cones caused by a gene mutation <p>W</p>

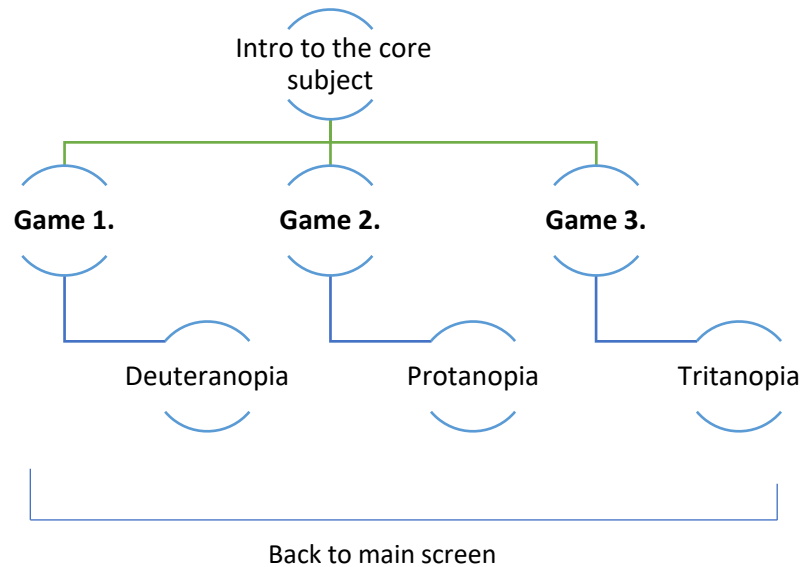
BOTH, caused by recessive genes in the X chromosome.

https://makecode.com/_V8vdkse7DQY

Research process and moodboard

GAME MECHANICS & DESIGN

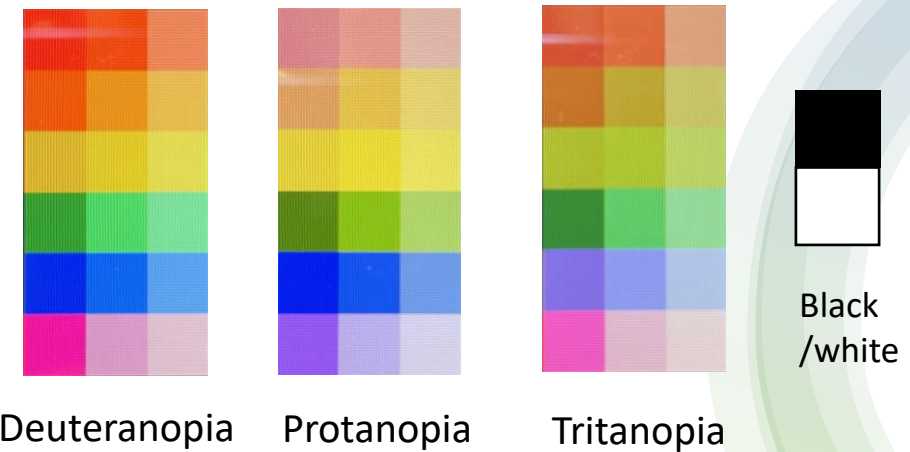
Logic and Flow



- ! Each sub-game implements its corresponding correction colour palette and presents information concerning the eye condition.

Style and Graphics

- Retro games
- Concise and informative
- ! Customised colour palettes (colour correction)



GAME 1

Deuteranopia

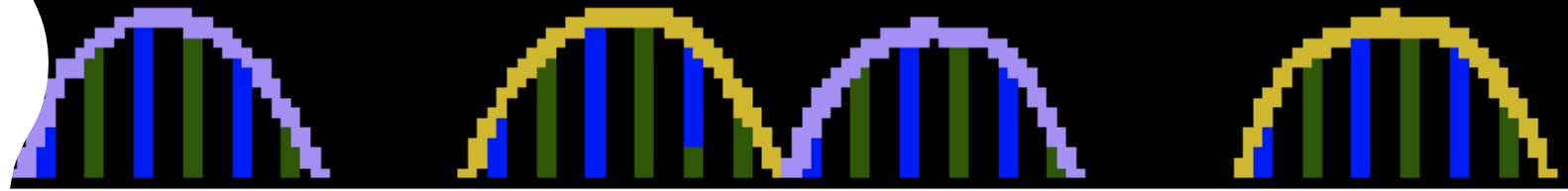
- Information on Deuteranopia.
- Instruction on how to play the game.
- Game play – Collecting the missing genes (score ++) and avoiding to fall the platform (score --)
- Result
 - WIN – finish the level
 - LOSE – failed the level

OPN1MW (green)

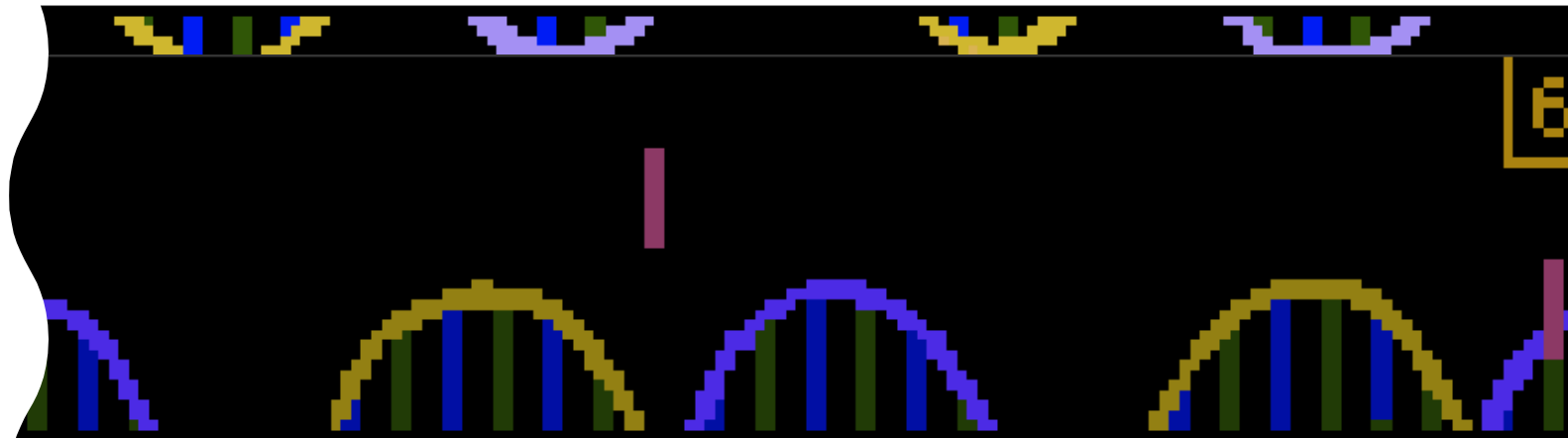


GAME 2 Protanopia

- Information on protanopia
- Instruction on how to play the game
- Game play – collecting the missing genes (score ++) and avoiding the others (life --)
- Result
 - WIN – survived and collected at least one missing gene
 - LOSE – ran out of lives, did not collect any missing genes
 - OPN1LW (red)



CONGRATS!
OPN1LW (L-cone) collected!



GAME OVER!

Score: 6



CONGRATS!

OPN1SW (\$-cone) collected!



GAME OVER!

Score: -6

HI 2



GAME 3 Tritanopia

- Information on Tritanopia
- Instruction on how to play the game
- Game play – finding a way out of the maze, collecting the missing genes (score ++) and avoiding the others (score --)
- Result
 - WIN – got out of maze and score ≥ 1
 - LOSE – did not get out of the maze within 100s, score < 1

OPN1SW (blue)

Biggest Challenge & Future Development

Setting up Correction Colour Palettes and working synchronously in the same document!

Improving graphics/
polishing facts/ generating a
consistent narrative.

UX: improving narrative and
Usability/ as well as glitches.

Blind Level. Exploring with
sensors (?)