

Chrono-Crew – Game Design Document

Ian Corkill

P2681678

CHRONO-CREW!

**Do you have what it takes?
Only -time-, will tell!**



Contents

PEGI Rating.....	Page 2
Age Rating.....	Page 2
Unique Selling Points (USPs).....	Page 2
Story.....	Page 2
Genre.....	Page 2
Game Summary.....	Page 3
Controls.....	Page 3
Characters.....	Page 4
Game World.....	Pages 5 & 6
Gameplay Mechanics (general).....	Page 6
Main Gameplay (including specific mechanics).....	Page 6, 7 & 8
Game Experience.....	Page 8
Difficulty Curve.....	Page 8
Cutscenes.....	Page 8
Tutorials.....	Pages 8 & 9
Quests.....	Page 9
Collectables.....	Page 9
Screens.....	Page 10
Inclusivity / Accessibility.....	Page 10
Bonus Material.....	Page 10
Downloadable Content (DLCs).....	Page 10
References.....	Page 11

PEGI rating: 12, includes mild violence towards humanoid characters, but without fatality. (Pan European Game Information (PEGI), 2017)

Target age rating: 12+

Unique selling points (USPs):

- Customisable characters with an emphasis on inclusivity
- Gameplay accessibility
- Mix of historical and futuristic content
- Different modes of play for replay ability

Story:

Time travel and entertainment. Who would have thought that these two things would go hand in hand?

In the not-so-distant future, humanity has discovered the means to travel through time.

You're sitting at home, watching TV when an advertisement for a new gameshow appears: Chrono-Crew!

"Do you want to defy imagination, without the danger and harm that comes with it?"

Do you want to win fame, glory and make your own history?

Do you want to wear crazy costumes whilst doing it all!?

It's wacky. It's zany. It makes no sense, but you can't take your eyes away!

CHRONO-CREW! The hit new gameshow that's sweeping up the sands of time!

Do you have what it takes? Only -time-, will tell!"

The advert finishes with a swirling blue pattern on the screen and the only text that remains is:

"Do you want to play?"

Genre:

Chrono-Crew is a 2D multiplayer action platformer and is designed to be played via PC platform.

Camera mode: 2D side scrolling, locked onto player character during gameplay.

As Chrono-Crew consists of a multitude of different minigames, some sub-genres attributed to this could be seen as:

- Racing
- Puzzle
- Sport
- Combat
- Hide and Seek
- Collection

Game Summary:

In Chrono-crew, 2-4 players will take on the role of a Contestant in the show and compete in a series of minigames spanning across time. Players will score points based on the position they attain in the challenge, with 1 point for last place and 4 points for first place. At the end of 6 minigames (equivalent of a 'show'), the player in first place will be crowned the champion. Each player will receive a pay out of Chrono-Coins (in-game currency) on completion of a show. These can be spent on cosmetics, such as additional costume pieces, trinkets and decals for your Chrono-pack. The number of Chrono-Coins is based on 1st, 2nd, 3rd and 4th place with 1st getting the most and 4th the least.

Controls:

Below is an outline of what the generic controls will be. However, players will also be able to remap these as they see fit for both keyboard / mouse and controller.

Due to the limited number of controls required for Chrono-Crew, the use of adaptive controllers will be integrated. As player to player combat is restricted to one minigame, player movement can be done with WASD keys, joysticks or directional buttons without the need for another joystick or mouse to aim. Additionally, only two buttons are required to use / shoot and rewind during gameplay. (PN, 2018.)

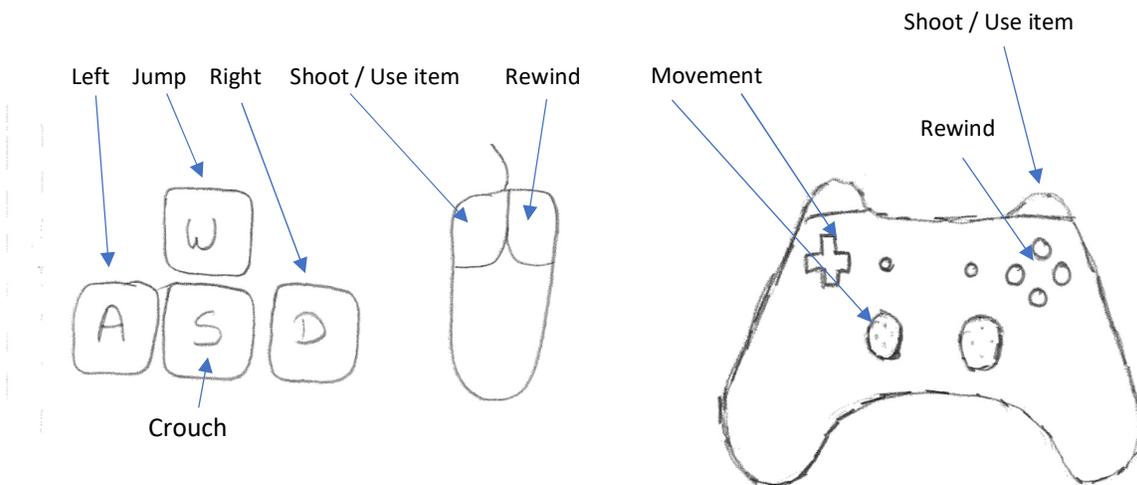


Fig 1. Layout and controls for keyboard / mouse and controller.

Characters:

Contestant

Each player will be presented with a customisable humanoid figure, to allow the players to express themselves in the image they desire. Fitted with a Chrono-Pack, the Contestants partake in minigames to score points and hope to be crowned winner of the show, seeking fame and glory.

These options are:

- Skin colour
- Clothing
- Hairstyle
- Face accessories
- Chrono-Pack

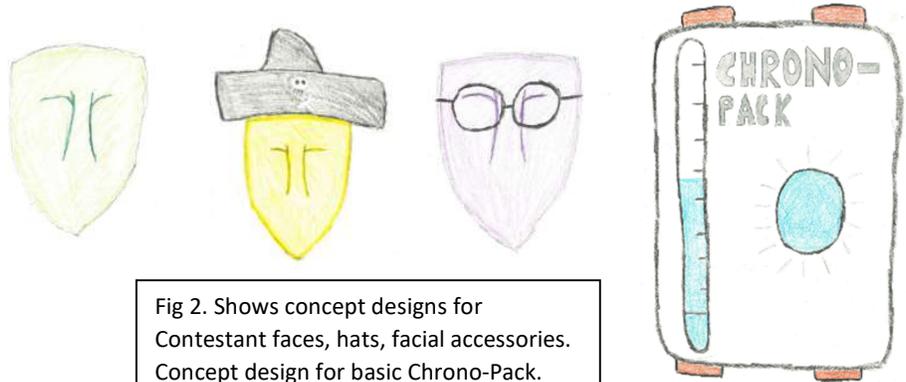


Fig 2. Shows concept designs for Contestant faces, hats, facial accessories. Concept design for basic Chrono-Pack.

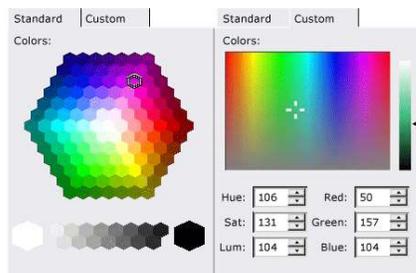


Fig 3. Colour palette suggestions for skin tone selection. (Microsoft, 2021).

NPCs:

Tic & Toc

The Hosts of the show, Tic and Toc are two charismatic robots who provide commentary on level introduction, as well as commentary on player successes and failures. Tic and Toc will be fully voiced, with assisted voice modulation to sound more animatronic.

Tic's description:

- Flamboyant turquoise jacket
- Manufactured hair built into the head – quiff
- Large, round eyes. Thin mouth slot with mesh covering. Thin arms, legs and slim chassis. Chrome
- Microphone

Toc's description:

- Tailored lavender shirt with pale blue dungarees
- Manufactured hair built into the head – mohawk
- Small square eyes. Thin mouth with mesh covering. Bulky arms, legs and chassis. Chrome.
- Microphone

Game World:

Chrono-crew will take place in a multitude of different time periods, with a stereotypical approach to aesthetics:

Pre-historic / Ice age

- Mountainous regions, flora and fauna abundant, no modern structures, frozen wastes
- Lots of greys, greens, vibrant plant life colour
- General level music would be drums / bongos to provide primitive milieu

Ancient Egypt

- Pyramids, sandstone sculptures, simple artwork such as hieroglyphics, sarcophagus'
- Oranges and yellows to represent sandy / desert colouration, primary colours for hieroglyphics, gold ornaments
- General level music would be mainly violin, providing long notes for a mysterious setting

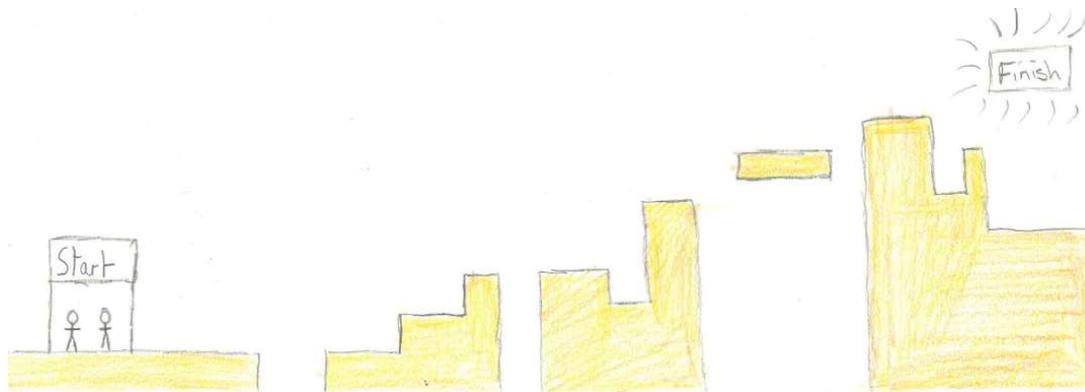


Fig 4. Concept art of Reset Race in Ancient Egypt setting.

Ancient Japan

- Pagodas, large ornate wooden gates, temples, wooden structures with triangular roofs, well-kept foliage
- Pastel / peaceful colours, whites and creams
- General level music would be peaceful / tranquil, provide a sense of calmness until minigame begins

Aztec / Mesoamerican

- Large stone temples, wooden hut structures, jungle / forest like setting
- Primary colours for decorations / artwork, vibrant greens for foliage, different shades of grey for stonework
- General level music similar to panpipe folk music

Golden Age of Piracy

- Pirate ships, shanty town, treasure hoards, jungle, open ocean
- Mainly wood colours for structures and ships, gold for treasure, deep blues and greens for the ocean
- General level music would be accordion, sea shanties or sounds of rabble rousing

Wild West

- Wooden structures / buildings, saloons, gallows, open desert fields / tumbleweeds, skulls, desiccated and healthy plant life
- Browns for wooden structures, desert colours of yellow and orange, vibrant greens for pastures
- General level music would be quick paced banjo and harmonicas

2069

- Tall skyscrapers, metal structures ranging from pristine or distraught, neon signage, big screens, time gates, flying traffic
- A lot of chrome / clean colours for buildings and general aesthetics, bright neon colours for signs / graffiti
- General level music would be synthesised to provide a stereotypical futuristic milieu for well-kept parts of the future, grungy base music for a more distraught street setting.

Gameplay mechanics:

General mechanics:

- Time-fuel – player “health” bar which is depleted when player character takes damage. Different game modes can affect this in different ways. Bombs in Time-Bombers will deplete fuel in descending increments till fully depleted. Reset-Race traps will reduce a player’s fuel instantly to zero but respawn them at a check point.
- Rewind – during each game mode, players will be given the opportunity to rewind time on one occasion per challenge, allowing their player character to be transported back to a “safe position” and continue the challenge. There will be a small window after the reset that the player is “immune” to damage, so as not put the player in a position where this mechanic is wasted.

Main gameplay:

In Chrono-crew, there are a variety of different minigames to test a player’s skills. These and more specific mechanics, are outlined below:

Reset Race

- Foot race in which players will need to avoid basic obstacles and hazards randomly generated through the course. E.g., pit fall traps.
- Players can place two of their own traps to disrupt the other players. E.g., arrow launcher, rolling boulders, etc. Traps and obstacles to represent the time period.
- Players will pass checkpoints through the race to save their point in time. When a player would “die”, the player is respawned at the last checkpoint they passed and continues the race.
- The first player across the finish line will start a countdown timer for the remaining players to finish, where the timeline is “reset” (starting from the beginning of the course) and any players caught in the reset are eliminated.

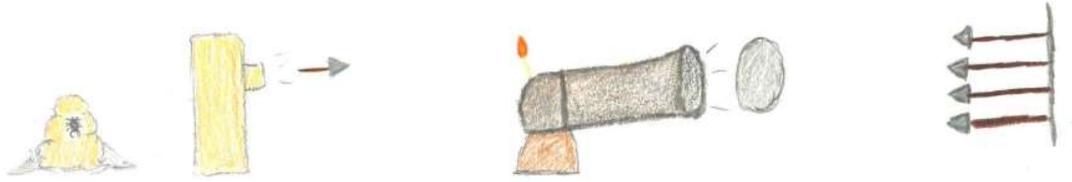


Fig 5. Concept designs for traps. From left to right; a scarab hive, arrow trap, pirate ship cannon and a spear wall.

Time-Bombers

- Combat arena in which players will need to throw time bombs at each other to deplete other player's chrono-pack fuel.
- Players will throw bombs at other players with a small area of effect splash damage, on contact with other players and terrain.
- Splash damage from bombs will do less damage than a direct hit.
- When a player's chrono-pack fuel is reduced to zero, player is eliminated.

Bullet Time

- Enclosed arena in which players will need to avoid being hit by projectiles which reduce chrono-pack fuel.
- As time progresses, more projectiles will be fired into the arena from different points until one player remains.
- When a player's chrono-pack fuel is reduced to zero, player is eliminated.
- Projectiles will be themed to the time period.

Time-Tag

- Players will be enclosed in an arena, tasked with "tagging" players until only one player remains.
- When a player is tagged, they will have a short amount of time to pass the tag onto another player.
- If a player is tagged at the end of the timer, they are eliminated.
- The tagged player is chosen at random at the beginning of the challenge and after each elimination.
- Tagged players will be highlighted (use of a floating tag above their head or highlight Contestant) to confirm they are tagged.

Hieroglyphics

- Picture based matching game, in which players will need to match the picture highlighted at the top of the screen with the corresponding time-gate in game.
- If a player does not match the pictures correctly, they are sucked through the nearest time gate.
- There is a safe zone for each gate and if the correct picture is matched, the player will not be eliminated.
- Pictures will be relevant to the time period.
- Rewind ability to be disabled for this minigame.

Time Capsule

- Timed challenge in which players will be placed in a "capsule" and attempt to collect as much of the specified item as possible.
- Items will randomly spawn throughout the capsule.
- Player with the most items collected at the end is the winner.

- Players will need to traverse different platforms / levels of the vault to find items, similar in style to the Reset Race, but in an enclosed environment.

Game experience:

When the player first starts the game, they would be presented with a sense of a calm before the storm. The initial loading screen is a T.V. with a swirling time vortex in the centre. This will change as the player chooses an option, such as a Show, minigame mode, etc. The music for the main menu will be uplifting, but less orchestral and more synthetic and electronic.

During the game, players will be presented with different themes and musical genres, each of which will present their own experience and be tailored to the time period the stage is set. However, when players begin to undertake the minigames, the general theme of chaos would ensue through faster paced music, explosive visuals and countdown timers, providing a sense of urgency to the game.

Difficulty curve:

In Chrono-Crew, there are three levels of difficulty:

- Beginner
- Intermediate
- Hard

These difficulty settings are attributed to map layout and complexity. Beginner will have fewer obstacles blocking their path to reach objectives, whereas Hard will challenge players with more obstacles. In order to reward players based on the difficulty which has been selected, end rewards for 1st place are much higher compared to the previous levels of difficulty. 2nd, 3rd and 4th place will provide similar levels of rewards for each tier, so that winning in each difficulty bracket provides a sense of achievement and a justifiable reward.

Cut Scenes:

- Opening cutscene will show a television, where the camera slowly moves towards it. The TV picture will show a swirling blue vortex which the camera enters. During the transition from the entrance to the end, the player will see pieces of history but slightly different, with cowboys running through ancient Egypt or a Pirate in a futuristic setting, competing against a samurai and a Neanderthal, throwing bombs at each other. At the end of the vortex, the players will be greeted by Tic and Toc, who welcome them to a scene of chaos with other participants competing in challenges.
- At the beginning of each challenge, players will be presented with a short cutscene to show the layout of the challenge. Races will start at the end and transition to the beginning. Arenas will start in the centre and rotate around to show the level.
- At the end of each show, the players will be presented with an award ceremony with a podium for 1st, 2nd and 3rd place.

Tutorials:

Each time a new challenge is presented to the player, a mixed exploratory and didactic tutorial will be provided. The pre-minigame screen will list the controls and have an additional screen which presents a smaller version of the challenge. This will allow the player to test the challenge through both cognitive apprenticeship and scaffolding. The use of a multifunctional tutorial will allow for varied learning types to understand how the minigames work and provide further inclusivity.

Minigames will automatically start after 30 seconds or until all players have confirmed they are ready to proceed to the challenge. In this way, players who already know the controls and mechanics for the minigame can opt to skip ahead and the short timeframe means that they do not have to wait long in the event a player is new to the game.

Quests:

Quests in Chrono-Crew will be presented in daily and weekly objectives, which players can complete to gain rewards. These objectives are not pertinent to the story and so a player is not restricted to progress in the gameplay if these are not completed. Quest rewards will be additional Chrono-Coins or unique cosmetics which cannot be purchased.

Some examples of quests are:

- Compete in a show till the end
- Come first in a show
- Place first or second in 5 challenges
- In the Time-tag game mode, tag a player 5 seconds before the timer runs out and survive

Depending on the difficulty of the objective, this will determine the chrono-coin or item pay out. For example, the above Time-tag challenge would provide a higher difficulty curve compared to competing in a show till the end and therefore, a better reward.

Objectives can be completed in all game modes, except for minigame mode, as the minigame mode does not constitute a full show.

Collectables:

Players will acquire Chrono-Coins simply by playing the game and completing a show or objectives. These coins are used to purchase cosmetic items for the player character, so that they can be customised to the player's specification. These are purely for aesthetic purposes and do not impact on gameplay.

Some of these cosmetics are (but not limited to):

- Cowboy hat
- Toga
- Jungle themed decal for your chrono-pack (large green leaves, fruits, coloured flowers, etc.,)
- Venetian style ballgown

Certain cosmetic items can only be gained through particularly challenging objectives and could be seen as an "achievement" in the game.

Fig 6. Concept art of Contestant face with hairstyle.



Screens:

Main menu

- Show
- Custom Mode (Minigames)
- Customisation
- Store
- Level Creator
- Options
- Exit Game

Options

- Master volume
- Sound effects volume
- Subtitles
- Music volume
- Remapping of controls for Mouse/Keyboard and Controller
- Colourblind mode (Troiano, Birtolo & Armenise, 2016.)
- Photosensitive mode
- Grey mode

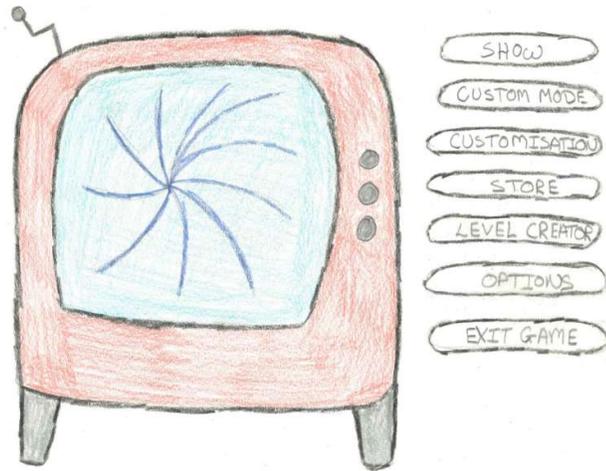


Fig 7. Layout of main menu with option selection and TV for visual effects

Inclusivity / Accessibility:

- Freedom of self-expression – customisable player models with limited organic features, allowing players to determine the orientation of their player character, rather than defined gender roles.
- Use of realistic and fantastical skin tones.
- Colourblind mode (Troiano, Birtolo & Armenise, 2016).
- Photosensitive mode and warnings (Xbox Microsoft, 2021).
- Dyslexia friendly colours / colour pairs (Jaramillo-Alcázar, et al. 2021), as well as audio options conveyed by Hosts.
- Adaptive controller integration.
- Internet and LAN compatibility.

Bonus Material:

- Custom mode – if you don't feel like taking part in a main show or want to play against just your friends, custom mode allows you to make your own shows using either randomly generated levels or those made in the level creator, as well as which challenges you want to take on.
- Level creator – although main game uses randomly generated levels, level creator allows you to make your own arenas and races for custom games or to share with the community.
- Minigame mode – want to practice a particular challenge or just prefer playing one over the others? Compete against other like-minded people to hone your skills.

DLCs:

- Additional customisation options – more costume pieces and decals for your Chrono-pack, as well as future skins for trophy ceremonies and more!
- Additional time periods – players will be able to experience additional time periods, such as Ancient Greece and even eras which humanity is yet to experience.

References:

- Armenise, R.A., Birtolo, C. & Troiano, L. A validation study regarding a generative approach in choosing appropriate colors for impaired users. *SpringerPlus* 5. Published: 15/07/2016. Available at [A validation study regarding a generative approach in choosing appropriate colors for impaired users | SpringerLink](#) or <https://doi.org/10.1186/s40064-016-2659-6> (Accessed: 11/12/2021).
- Epilepsy Foundation. (2020) Photosensitivity and Seizures. Available at [Photosensitivity and Seizures | Epilepsy Foundation](#) (Accessed: 12/12/2021)
- Jaramillo-Alcázar, A. *Et al.* (2021) 'An Approach to Accessible Serious Games for People with Dyslexia.' *Sustainability* 2021, 13(5), page 2507.
- Microsoft. CMFCCColorPickerCtrl Class. Available at: [CMFCCColorPickerCtrl Class | Microsoft Docs](#) (Accessed 11/12/2021).
- Pan European Game Information. About PEGI: What do the labels mean? Available at: [What do the labels mean? | Pegi Public Site](#) (Accessed 11/12/2021).
- PN. (2018) 'Adaptive Video Game Controller.' *PN newsbeat*, 72(8), page 52. Available at [newsbeat. Adaptive Video Game Controller.: EBSCOhost \(dmu.ac.uk\)](#) (Accessed 14/12/2021)
- Rogers, S. (2014) *Level up! The guide to Great Video Game Design*. 2nd edition. Chichester, West Sussex, United Kingdom. John Wiley & Sons Ltd.
- Xbox Microsoft. (2021) Photosensitive Seizure Warning. Available at [Photosensitive seizure warning | Xbox Support](#) (Accessed 12/12/2021)

Figure List:

Below is a list of the images used throughout the game design document. Most are freehand drawings made by myself and so have not been referenced in the text. I have however, provided a list of the figures with short descriptions below.

Figure 1 – layout to show basic pre-mapped controls for Chrono-Crew.

Figure 2 – Concept designs for Contestant faces, including designs for accessories and a basic design of the Chrono-pack.

Figure 3 – Colour palette to be used for Contestant skin tone selection. (Microsoft, 2021)

Figure 4 – Basic concept art of what a reset race might look like, using the colour concept of the Ancient Egypt time period as outlined in the Game World section.

Figure 5 – Concept design for some of the traps which players can use in the Reset Race minigame.

Figure 6 – Concept art for another Contestant face and hair accessory.

Figure 7 – Concept design for the layout of the main menu for Chrono-Crew, includes TV mentioned in the Story section and Cutscenes.