



Game Design Documentation

Version 2.0

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29-10-17

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DESIGN HISTORY

25-10-17

Initial design document created.

29-10-17

Amendments to storyboard layout and in-game flowchart.

SECTION 1 – GAME OVERVIEW

I. Introduction

In this 2D web application game, the players will walk through the greenhouse gas footprint chain for four products; mobile phones, beef, leaving electronic devices on standby and plastic bottles. Along the chain journey players will take ownership of releasing the gases into the atmosphere, and as a result will see and hear about the effect on the four related habitats; the arctic tundra, rainforest, ocean and British countryside. A habitat animal narrator will guide players through the journey providing educational facts for enhanced learning. Players will have the opportunity to participate in mini games during the chain journey to select the animals who reside in the habitats they're learning about, and to provide a pledge on how they promise to try and help.

II. Objective of the Game

The objective of the game is for each player to learn about, and take ownership of, the greenhouse gas footprint chain for each of the four products, as well as providing a pledge of what they'll do to reduce greenhouse gas emissions.

III. Genre

Interactive, educational puzzle game.

VI. Features

- 2D game
- Team play
- Visual feedback
- Educational
- Interactive
- Real-time in-game updates

V. Platform

This game will be a web-based application, designed for use with on an Apple iPad using iOS 10.3.3.

VI. Intended Audience

The intended audience of this game is for casual or non-gamers of both genders from the age of 11 to 16, however the primary age range is 11 to 12 years old.

VII. Language

The game will only be in English.

VIII. Sound Consideration

The game play experience is not dependant on sound and as such the game does not require speakers of any kind.

SECTION 2 - STORY

I. Outline

Production and disposal of mobile phones, beef, leaving electronic devices on standby and plastic bottles are having a detrimental impact on four habitats around the world. An understanding of this process, and a pledge to help, is absolutely vital to the future of these habitats and the animals that live there.

II. Story Synopsis

The story relates the greenhouse gas footprint chain of production to disposal of four products to four habitats from around the world. At each stage of the chain, players are presented with a fact and relevant image, and the responsibility to release the emitted gases into the atmosphere. Upon release, the habitat view becomes darker and bleaker as the on-screen greenhouse gas meter rises. An animal narrator for each habitat describes the impact the gases are having on the habitat and once the chain journey is completed, they return to ask for help saving their home giving the players the option to provide select a predefined pledge to help, or not. Players who pledge will witness the on-screen pledge meter rising, which will impact their overall score at the end of the game.

III. Cut Scene Screens

Splash Screen



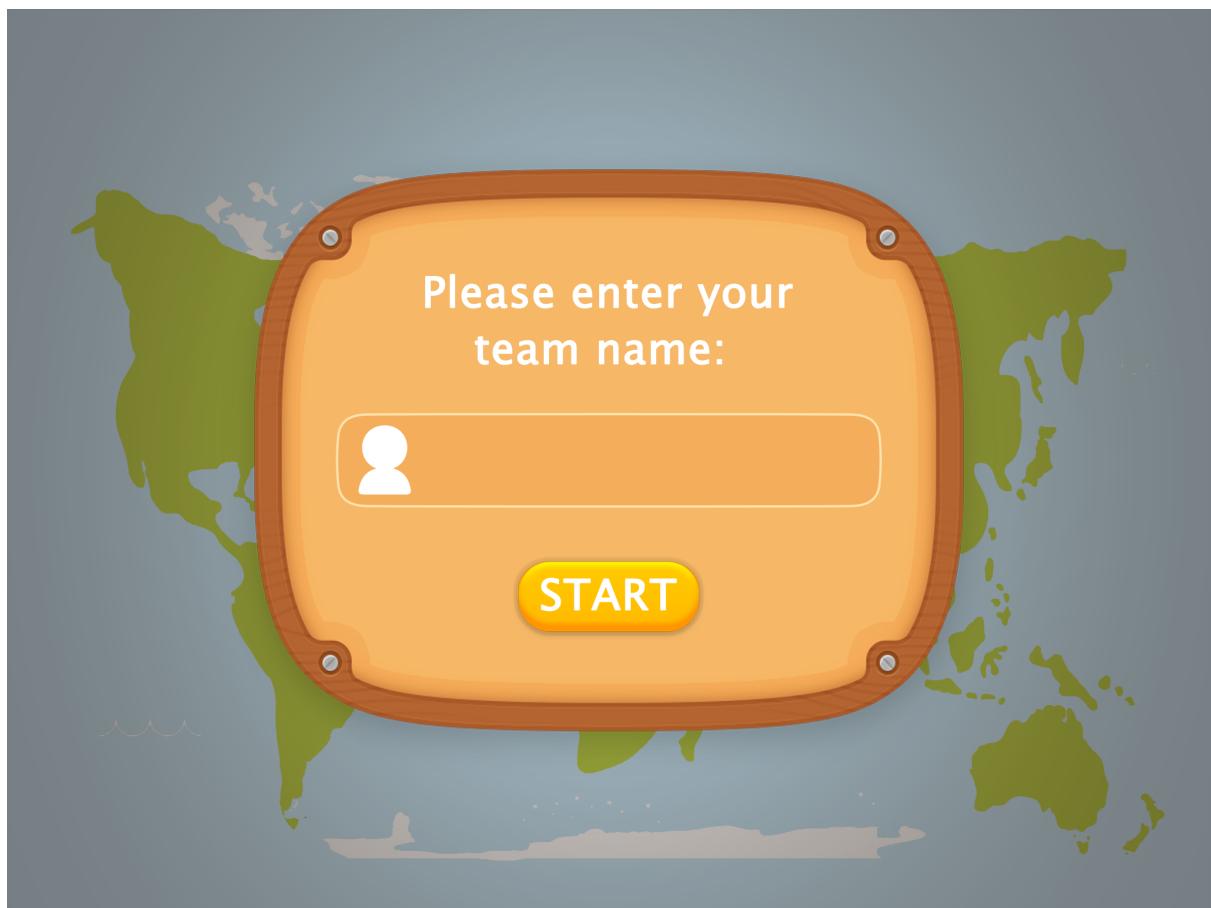
Loading screen.

Rotate Window



Window that will display if/when iPad is put into a portrait position.

Login Window

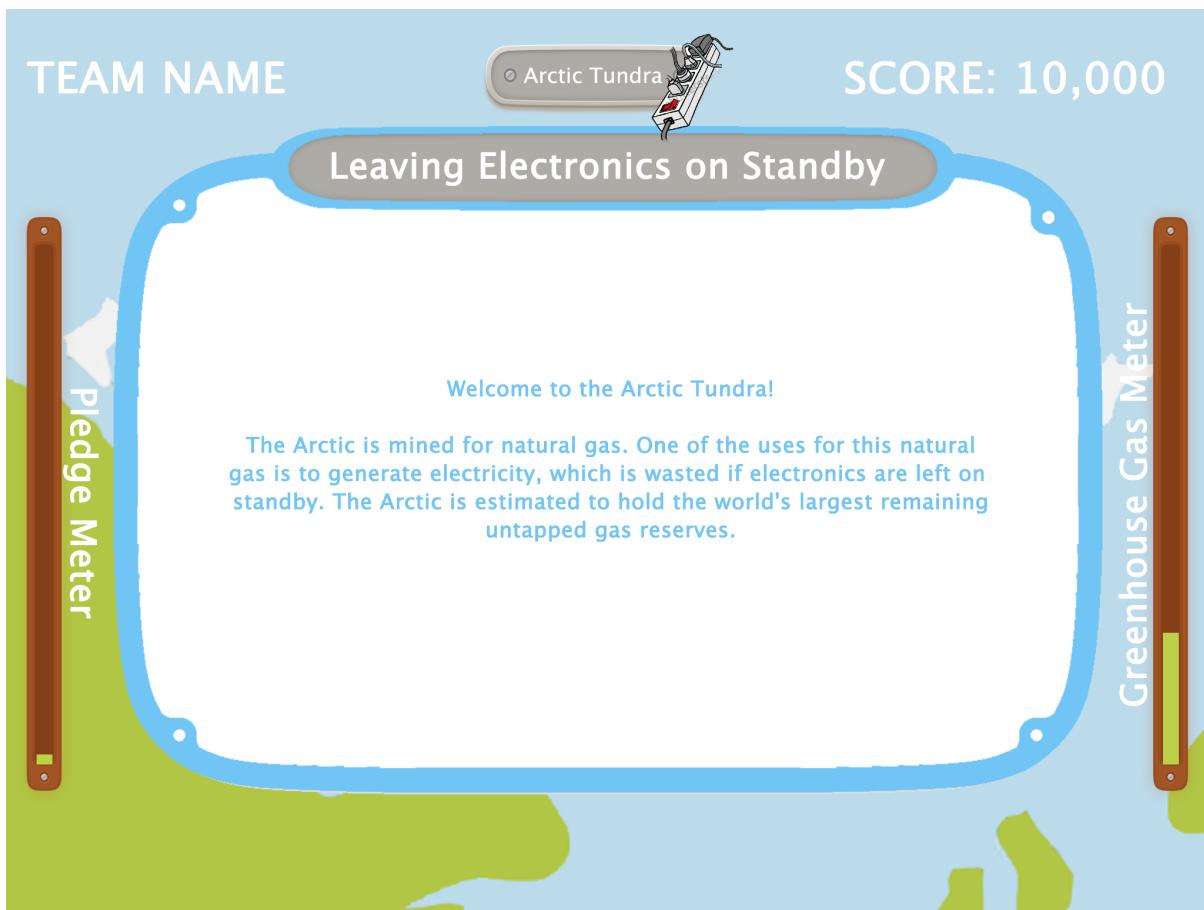


Players are requested to create and input a team name. A team name accommodates any number of players to one iPad.

World View

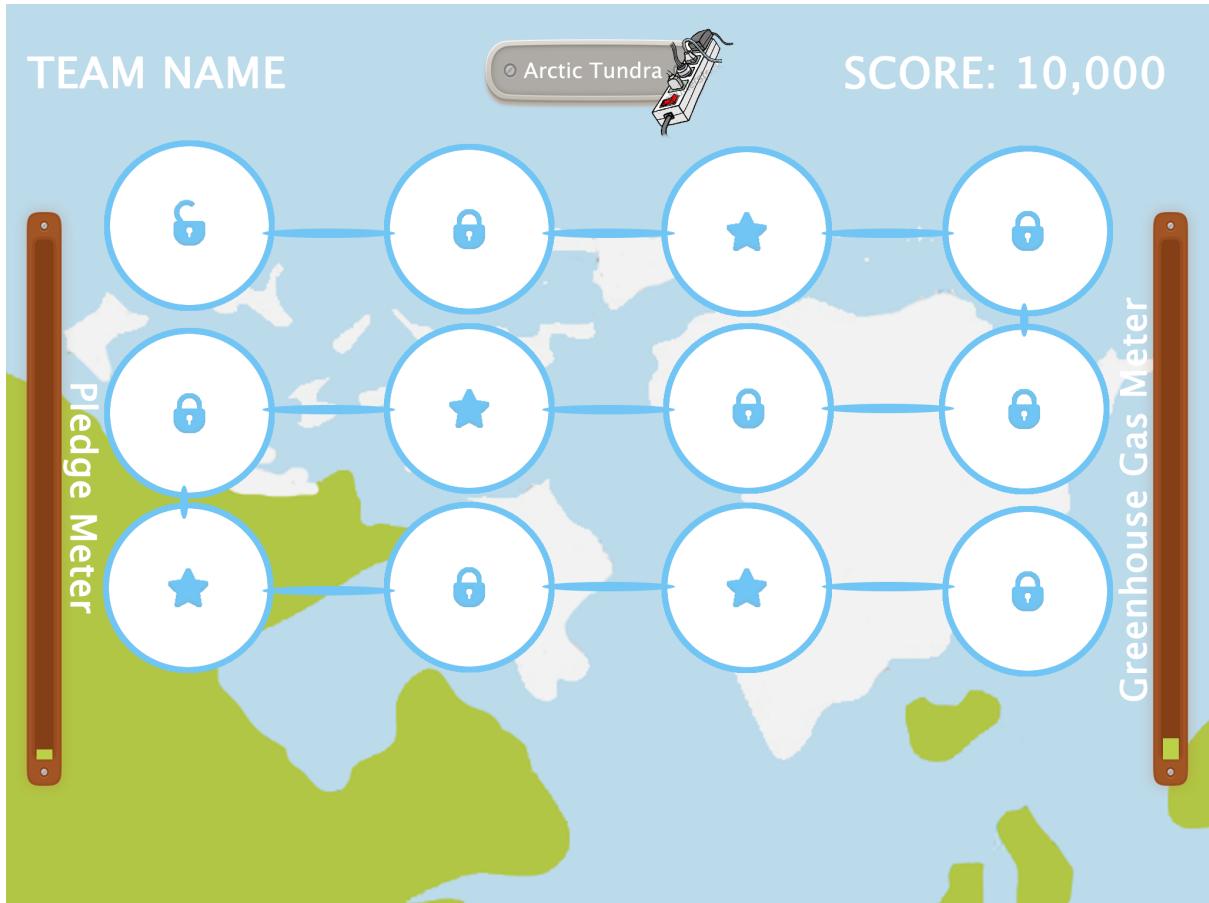


Chain View Introduction



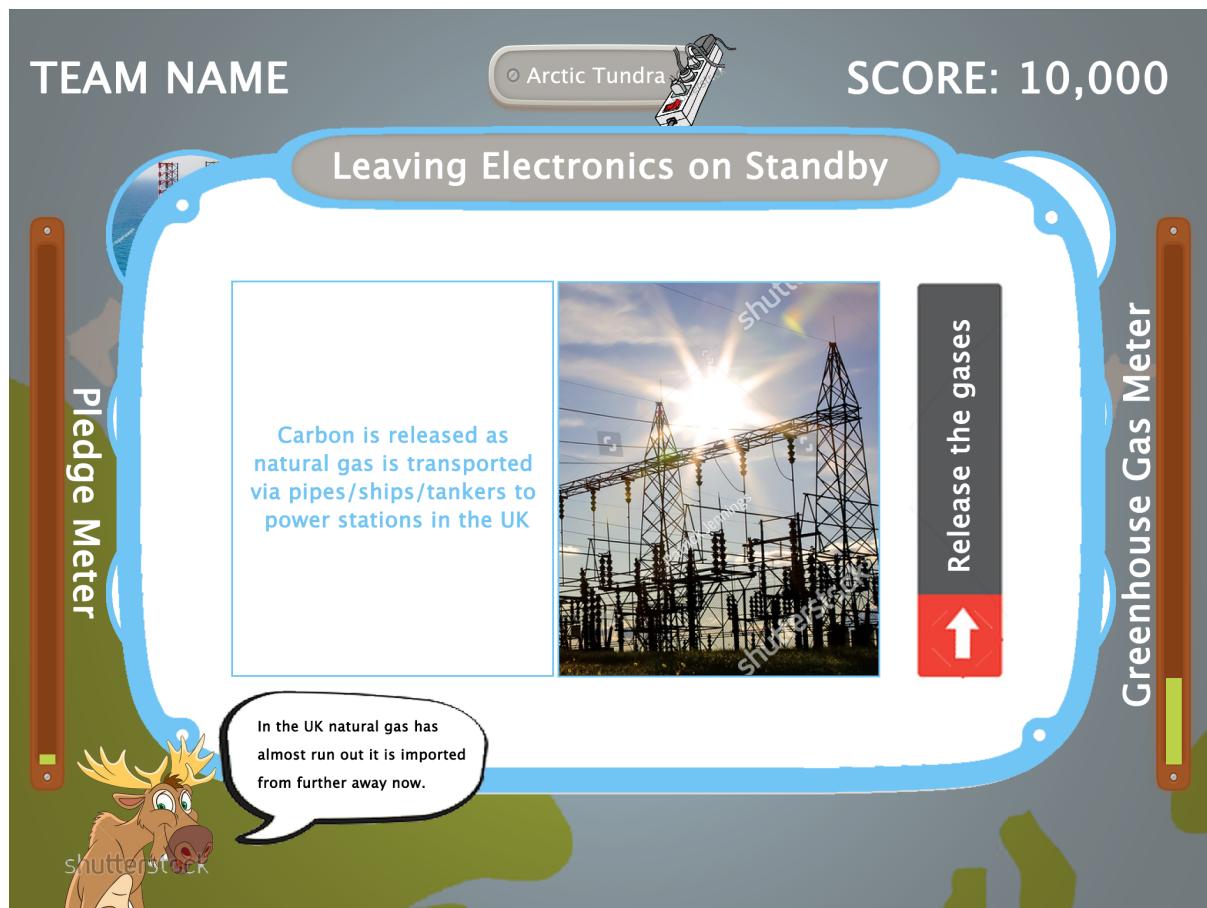
Players are provided with an introductory text for each habitat to provide an understanding of how the habitat links to its product.

Chain View Incomplete



Each habitat opens with an incomplete, unexplored chain. Players are directed on where to click by the visual aid of an unlocked padlock display.

Chain Fact



Each chain element displays a pop-up with each chain stage, a representative image and a slider for players to 'release the gases' into the atmosphere. Where applicable, animal narrators return to provide facts.

Chain Game

TEAM NAME: **Arctic Tundra**

SCORE: 10,000

Leaving Electronics on Standby

Which one of these animals lives in the Arctic Tundra?

Pledge Meter

Greenhouse Gas Meter

Timer: 00:30

The game interface features a central question and three animal images. The 'Pledge Meter' is on the left, and the 'Greenhouse Gas Meter' is on the right. The timer is at the bottom center.

Players are requested to select three animals who live in their playing habitat from a pack of nine animals. Four games are presented to players throughout each of the four chains.

Chain View in Progress



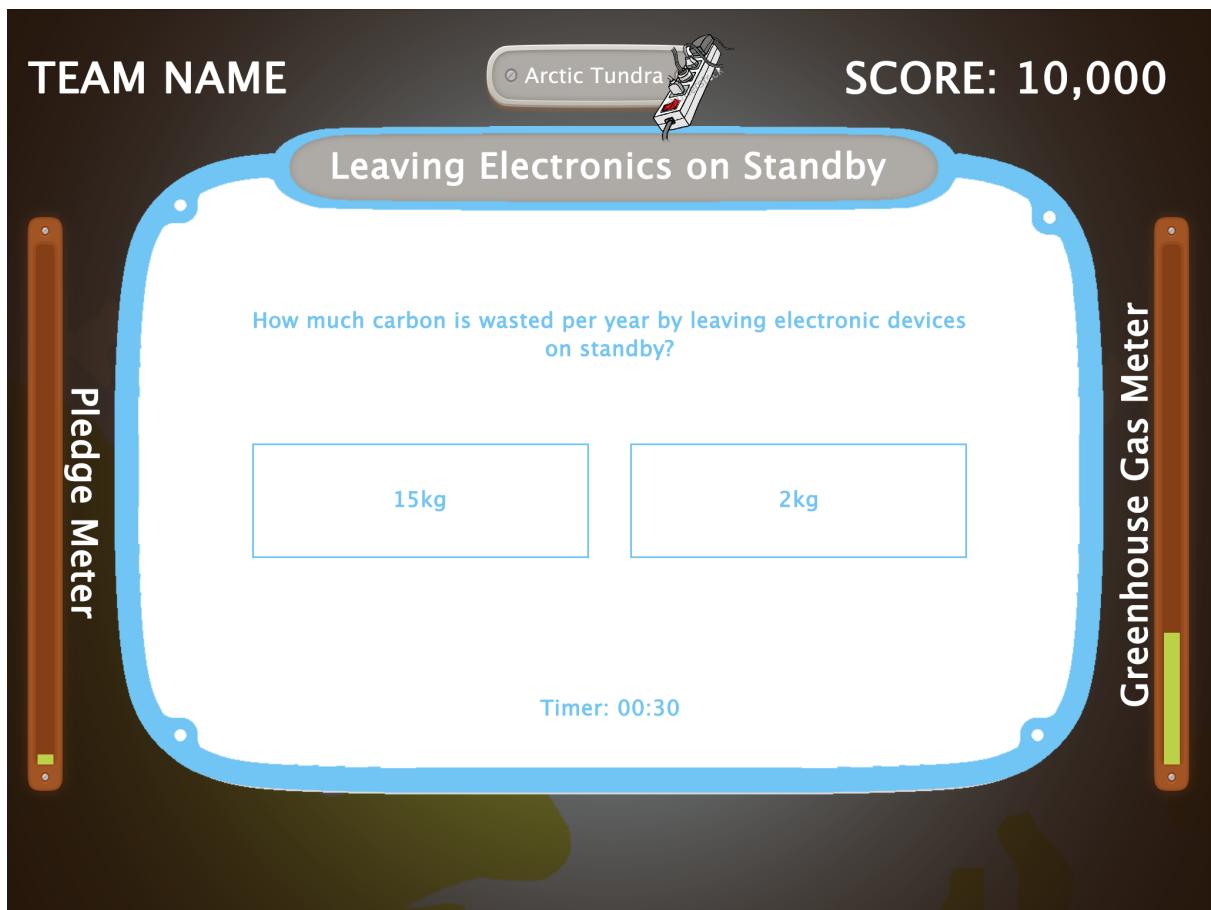
The greenhouse gas meter rises, and the habitat view becomes darker and darker as each chain journey progresses. Animal narrators return to provide updates on the effects the greenhouse gases are having on the habitat

Chain View Complete



The view of a completed chain.

Question Window



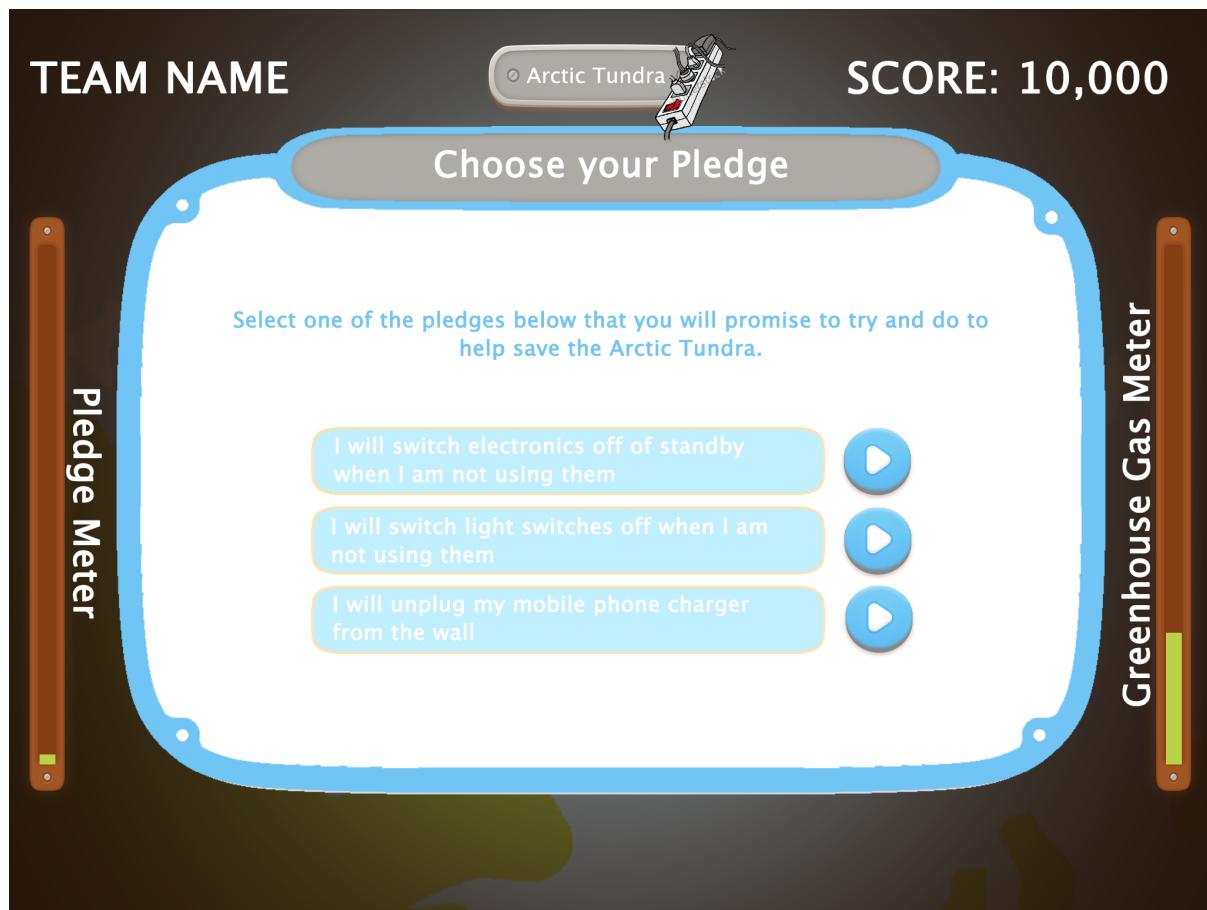
After each chain is completed, players are required to answer four questions based on their learning of the chain journey that they have just completed.

Help Window



Habitat animal narrators return to ask players to help save their home, presented with a real-life image of the destruction caused.

Pledge Window



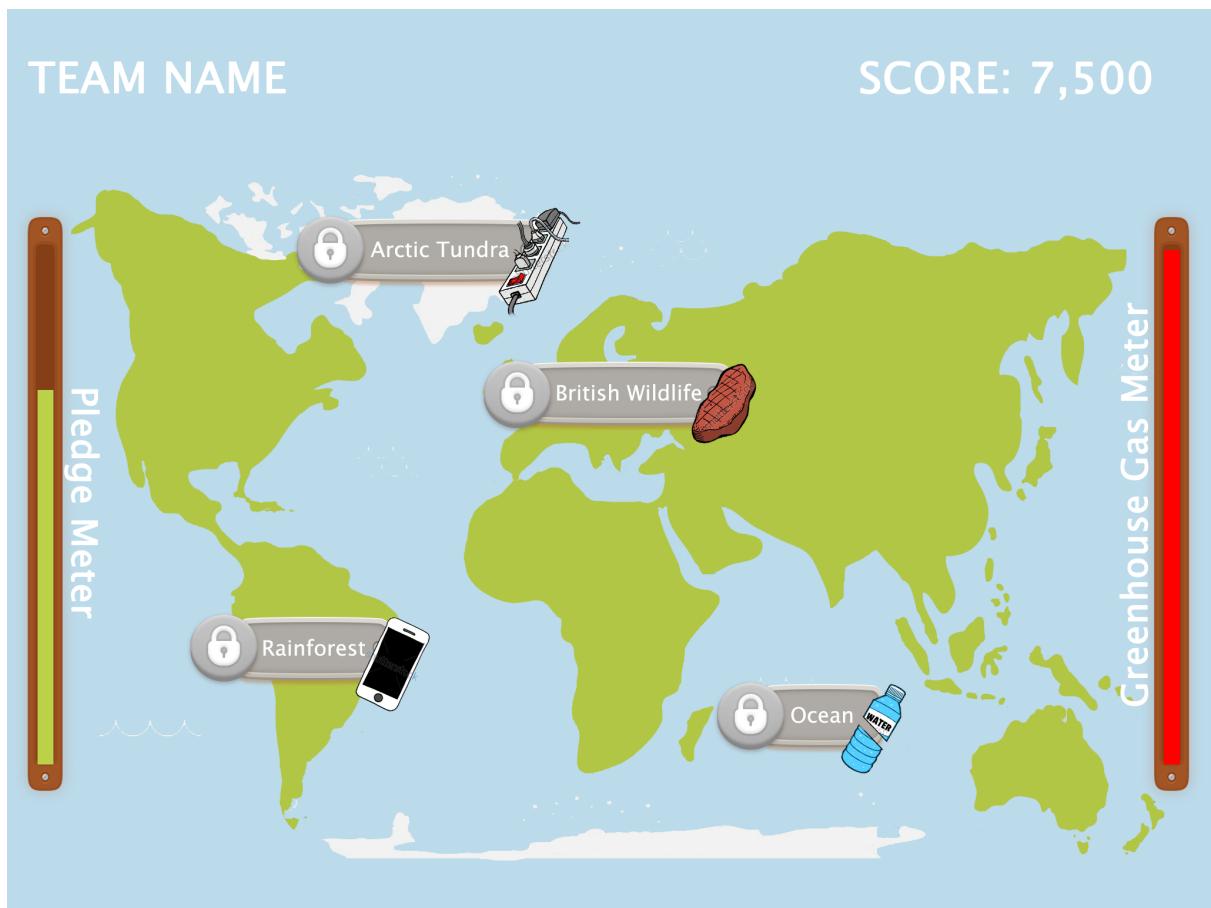
Players are asked to select one pledge out of three displayed that they promise to try and commit to in order to help save the habitat.

Thank You Window



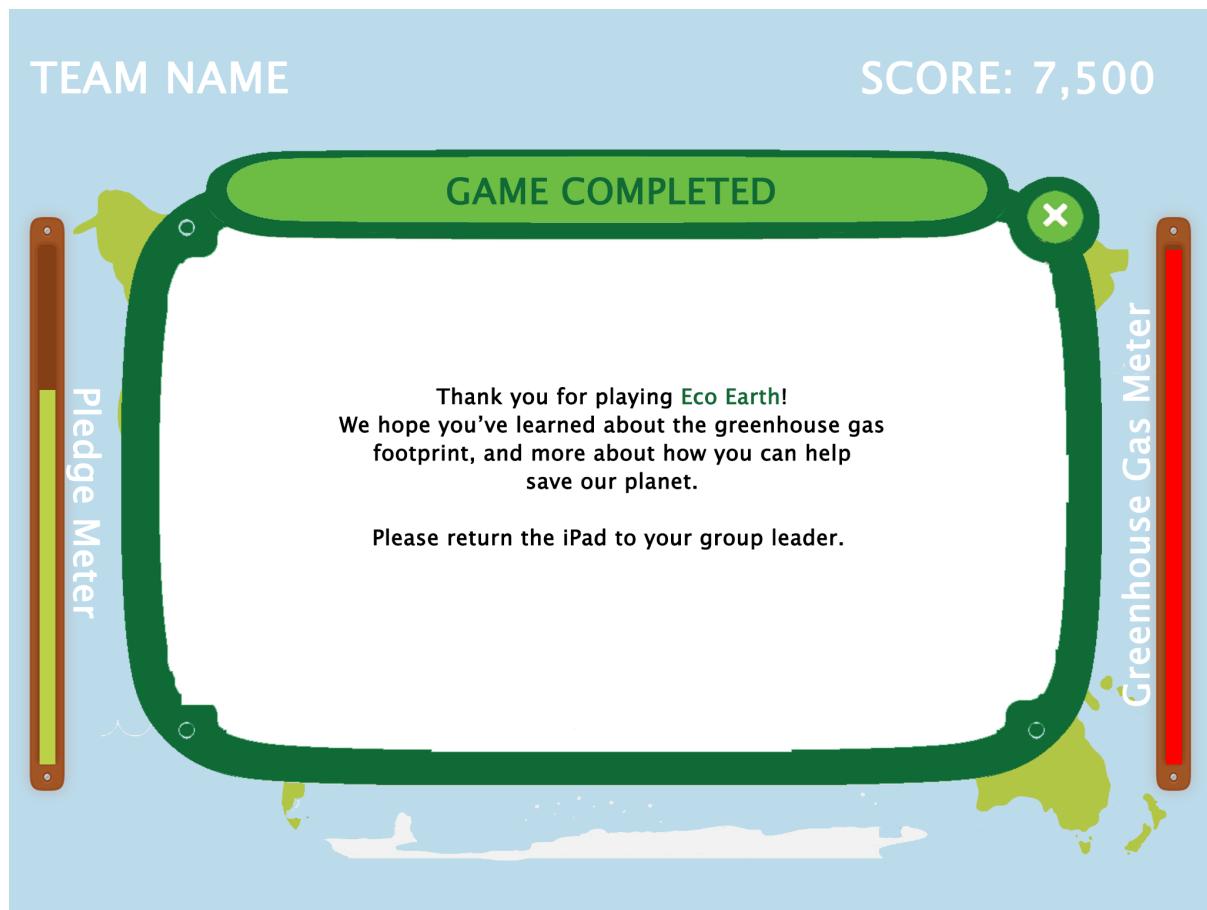
Players are presented with their chosen pledge and thanked for their input.

World View Complete



All habitats completed and locked. Display showing game with only 3 out of 4 habitat pledges inputted.

Game End Window



Players are thanked for playing and requested to return the iPads to their group leader.

SECTION 3 – CORE GAME MECHANICS

I. Camera

The camera will be stationary, with a top-down view of the world map or a zoom of each habitat during all scenes.

II. Team Play

This game will be played in teams.

III. General Movement

Players will be required to tap and slide during game play.

Tap: Required for habitat selection within the World View, to answer questions, participate in game play and select each stage of the chains on each habitat window.

Slide: Required to ‘release the gases’ into the atmosphere within the habitat chain facts.

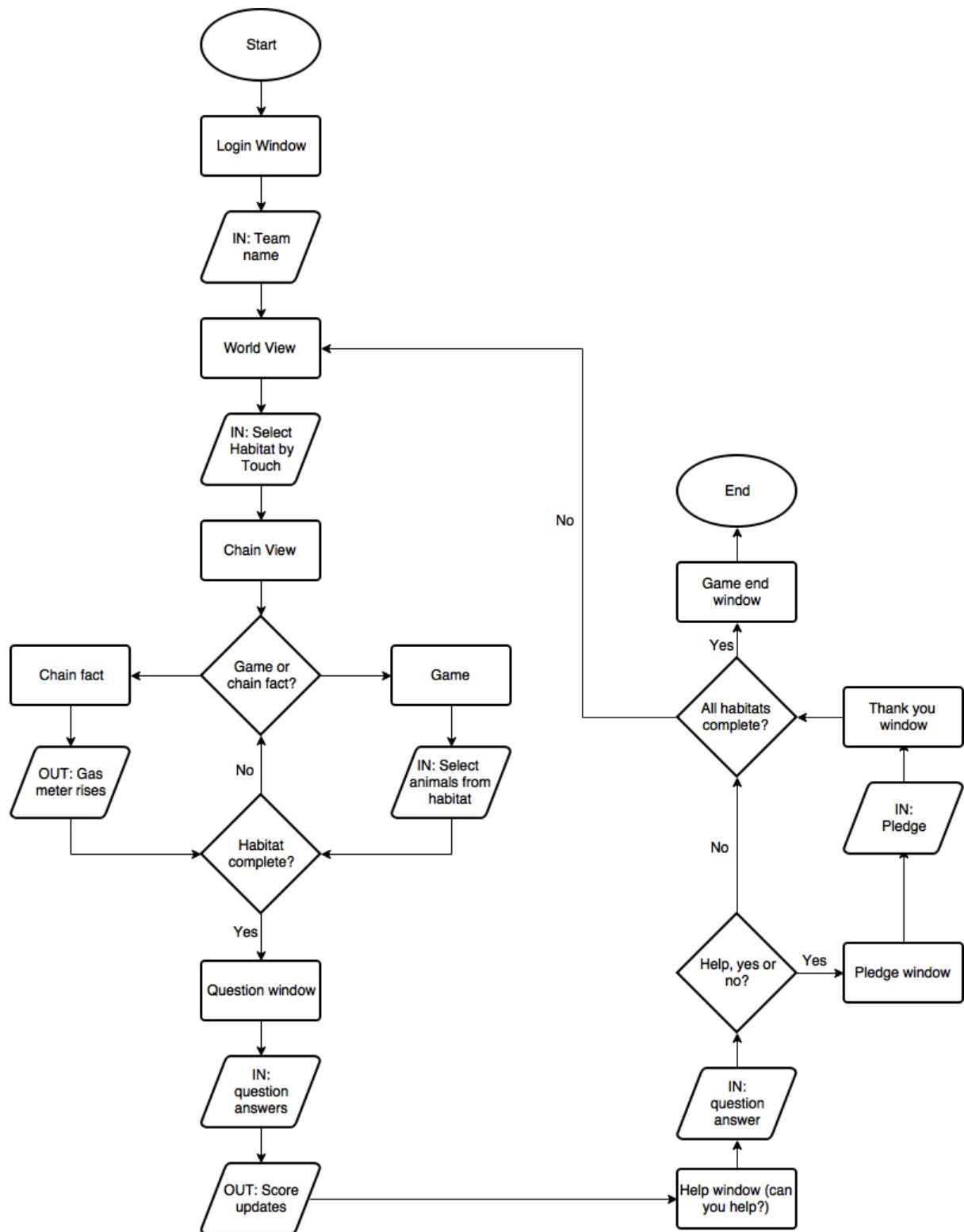
VI. Initial Set Up

The web app opens with a request for the team to create a team name and select an animal character of their choice. A ‘start’ button will move them into the World View, where the world is displayed with four unlocked habitats to select.

VII. Points

All teams will begin with 10,000 points, the maximum points. Each team must answer questions correctly to maintain their score, as each incorrect answer will reduce the score by 500 points.

SECTION 4 – INTERFACE FLOWCHART



SECTION 5 – IN-GAME ELEMENTS

I. Colour Pallet

Greenhouse gas meter green	bbd148	
Greenhouse gas meter amber	f3bd2a	
Greenhouse gas meter red	ff0000	
Narrator speech text black	000000	
Arctic Tundra blue	70c5f4	
Rainforest green	0ca734	
Ocean blue	08d0b6	
Countryside green	8ad10e	
Eco Earth logo green	106a35	

II. Fonts

In-game font: Lucida Grande, Regular, Strong

Logo font: Phosphate

In-game narrator text font size: 24pt

In-game chain facts text font size: 36pt

In-game HUD header font size: 60pt

SECTION 6 – CHARACTERS



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Habitat: British Countryside
Name: Olivia
Animal: Tawny Owl



www.shutterstock.com · 364728419

Habitat: Arctic Tundra
Name: Malcolm
Animal: Moose



www.shutterstock.com · 221421178

Habitat: Rainforest
Name: Susan
Animal: Emerald Tree Boa



www.shutterstock.com · 329375747

Habitat: Ocean
Name: Rocky
Animal: Rock Hopper Penguin

Eco Earth

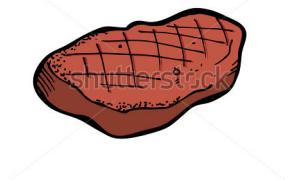
Assets Required

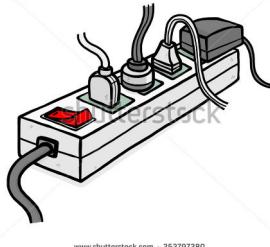
Habitat Animal Imagery		
British Countryside		
Badger	https://www.shutterstock.com/image-photo/badger-emerging-at-dusk-dorset-uk-532005283?src=ZgVuXuF5CviOOnmlapRokw-1-3	
Adder	https://www.shutterstock.com/image-photo/adder-female-704314174?src=qpVRlcUgn1tXK6DyBNNMJg-1-7	
Common frog	https://www.shutterstock.com/image-photo/common-frog-european-rana-temporaria-sitting-718248217?src=ksl4XBbBith1QmolXp0XUg-1-2	
Hedgehog	https://www.shutterstock.com/image-photo/west-european-hedgehog-erinaceus-europaeus-on-418100494?src=blNc-eK2fqjILZe9NSG9Kg-1-16	
Tawny owl	https://www.shutterstock.com/image-photo/tawny-owl-hidden-forest-brown-sitting-606790289?src=v7fh8RJtHXp24Egtw_SbaQ-1-4	
Click beetle	https://www.shutterstock.com/image-photo/beetle-click-on-green-leaf-568332022?src=PBZKKMMf_ZWiyQkWyFlZtw-1-14	
Scottish wildcat	https://www.shutterstock.com/image-photo/scottish-wildcat-on-large-tree-trunkscottish-423659773?src=Pr8go-wC8uAjPBhqQrG7PQ-1-0	

<u>Honey bee</u>	https://www.shutterstock.com/image-photo/honey-bee-307000682?src=CPFAeYEUImvTbYGtTZjh_Q-1-44	
<u>Red squirrel</u>	https://www.shutterstock.com/image-photo/red-squirrel-feeding-winter-county-northumberland-570009961?src=eAaKjlwLP1hDoidIKksm7g-1-0	
Ocean		
<u>Moon jellyfish</u>	https://www.shutterstock.com/image-photo/moon-jellyfish-506776849?src=5Jr9BU2XNk789ayvZJ-Q_w-1-95	
<u>Blue whale</u>	https://www.shutterstock.com/image-illustration/blue-whale-under-water-sun-light-439277209?src=8olvUhEGVAKCVdVEuTZPEA-1-4	
<u>Californian sea lion</u>	https://www.shutterstock.com/image-photo/head-californian-sea-lion-695932990?src=_Ul1Mncts9otp1hKunZfgQQ-1-4	
<u>Pink cauliflower coral</u>	https://www.shutterstock.com/image-photo/coral-reef-beautiful-pink-pocillopora-bottom-133578101?src=Oo1lsomXKvWStPNEvkT_tg-1-7	
<u>Northern rock hopper penguin</u>	https://www.shutterstock.com/image-photo/rockhopper-penguin-369694169?src=X15pCmYz9pETCJJ728EKww-1-16	
<u>Longsnout seahorse</u>	https://www.shutterstock.com/image-photo/longsnout-seahorse-known-hippocampus-reidi-marine-721334005?src=mU7yZfSG1lZzLxWDCnEKSv-1-2	

<u>Manta ray</u>	https://www.shutterstock.com/image-photo/manta-ray-585141907?src=FtVHeZeFQM50PFvV7LxZKw-1-0	
<u>Great hammerhead shark</u>	https://www.shutterstock.com/image-photo/great-hammerhead-shark-swimming-near-sandy-477301255?src=MYpOtsDWw8Q1uH8ofnrl8A-1-0	
<u>Bluestripe angelfish</u>	https://www.shutterstock.com/image-photo/bluestriped-grunt-picture-taken-south-east-77137255?src=HSLMdj-1FXCD20ixTZPuSA-1-5	
Arctic Tundra		
<u>Arctic hare</u>	https://www.shutterstock.com/image-photo/arctic-hare-lepus-arcticus-snow-showing-596894762?src=uMxoUkOCiameSvuBckxDQ-1-2	
<u>Arctic fox</u>	https://www.shutterstock.com/image-photo/arctic-fox-snow-529992223?src=0ZT4O1B_73pXK5DhOvCrEg-1-0	
<u>Reindeer</u>	https://www.shutterstock.com/image-photo/cute-baby-reindeer-457553776?src=leM8LO7HKCQhxRlkVB50aA-1-68	
<u>Moose</u>	https://www.shutterstock.com/image-photo/wild-alaskan-moose-585604031?src=Bf5Cc0_aVdnYU27-MwOo9g-1-5	
<u>Snowy owl</u>	https://www.shutterstock.com/image-photo/female-snowy-owl-stands-on-post-588393350?src=hxlmh8gjPVeA3B9KvYJQjg-1-1	

<u>Wolverine</u>	https://www.shutterstock.com/image-photo/wolverine-gulo-snow-white-background-638744086?src=t1cMJ46wei6kdf-vNSKqeA-1-20	
<u>Snow bunting</u>	https://www.shutterstock.com/image-photo/snow-bunting-wintertime-602372543?src=-NpeSH3XN5499y0hXLsGKA-1-5	
<u>Snow geese</u>	https://www.shutterstock.com/image-photo/snow-geese-chen-caerulescens-667043872?src=TGN78hXTtvuEZ02TKCuF5Q-2-6	
<u>Arctic tern</u>	https://www.shutterstock.com/image-photo/arctic-tern-adult-on-island-floor-540118495?src=8oU_C89vHmvL6MUATrm6EQ-1-1	
Rainforest		
<u>African dwarf crocodile</u>	https://www.shutterstock.com/image-photo/african-dwarf-crocodile-583921906?src=xt8LGP4c-lZ-4NdVqPofdQ-1-5	
<u>Sumatran tiger</u>	https://www.shutterstock.com/image-photo/sumatran-tiger-panthera-tigris-sumatrae-beautiful-630206468?src=E6lsMaF6NBnKOMRRyMFUoQ-1-13	
<u>Chimpanzee</u>	https://www.shutterstock.com/image-photo/frontal-portrait-young-chimpanzee-relaxing-on-508812640?src=v_BPClszMylyuc3_76Ckxw-1-2	
<u>Brazilian salmon tarantula</u>	https://www.shutterstock.com/image-photo/brazilian-salmon-pink-bird-eater-spider-718781683?src=rg-eS9d68jXpLzosJwsbg-1-0	

<u>Dyeing poison frog</u>	https://www.shutterstock.com/image-photo/poison-frog-blue-tropic-nature-yellow-728771074?src=RiCKvtroyVCTEIWE-TJ0A-1-4	 shutterstock www.shutterstock.com - 728771074
<u>Leafcutter ants</u>	https://www.shutterstock.com/image-photo/leafcutter-ant-cuts-leaf-macro-333898160?src=qty3kEk3USBVxowR_L5oOg-1-0	 shutterstock www.shutterstock.com - 333898160
<u>Emerald tree boa</u>	https://www.shutterstock.com/image-photo/emerald-tree-boa-on-branch-307654646?src=IJsG6fDof5QAZdalZBIDHA-1-34	 shutterstock www.shutterstock.com - 307654646
<u>Tokay gecko</u>	https://www.shutterstock.com/image-photo/closeup-tokay-gecko-313644251?src=G2xbO9oOEY6tllKwCDN6_A-1-3	 shutterstock www.shutterstock.com - 313644251
<u>Southern cassowary</u>	https://www.shutterstock.com/image-photo/southern-cassowary-705063988?src=ISNEJnOs_sgAwk4m7s3X0w-1-1	 shutterstock www.shutterstock.com - 705063988
In-Game Assets		
<u>World map</u>	https://www.shutterstock.com/image-vector/funny-cartoon-world-map-children-different-593619971?src=57_5Osys6eYrXcrNFbIBxg-1-47	 shutterstock www.shutterstock.com - 593619971
<u>Beef</u>	https://www.shutterstock.com/image-vector/tenderloin-steak-102555731?src=dRmyqH6D_1WasoRSh2l2g-1-16	 shutterstock www.shutterstock.com - 102555731
<u>Mobile phone</u>	https://www.shutterstock.com/image-vector/sketch-hand-drawn-illustration-smart-phone-288460265?src=CvTLsWip9e2kwCoXbPdSrw-1-69	 shutterstock www.shutterstock.com - 288460265

<u>Plug (electronics on standby)</u>	https://www.shutterstock.com/image-vector/many-plugs-electric-socket-cartoon-vector-252797380?src=eFEHIJIGJ8UweOoNc-dvg-1-67	
<u>Plastic bottle</u>	https://www.shutterstock.com/image-vector/water-bottle-ban-346941167?src=yl-bBemlYnN4Ui_2cCyQRw-1-53	
<u>Gas "release" slider</u>	https://www.shutterstock.com/image-vector/flat-web-design-elements-buttons-icons-136618376?src=7bPrZNOqgsJCOC01DTV6qg-1-29	
<u>Tundra risk</u>	https://www.shutterstock.com/image-photo/polar-bear-on-melting-ice-floe-193652336?src=OCP175yXukWbchQ7tk6OPw-1-14	
<u>Rainforest risk</u>	https://www.shutterstock.com/image-photo/destroyed-tropical-rainforest-amazonia-image-taken-429774907?src=_dnnKdgjlZfSmOsDnA3nqq-1-0	
<u>Ocean risk</u>	https://www.shutterstock.com/image-photo/coral-bleaching-occurs-when-water-temperatures-570782089?src=6zwBS6Y4a8tUDM-UWm7OmQ-1-3	
<u>Countryside risk</u>	https://www.shutterstock.com/image-photo/road-closed-sign-nearly-underwater-flooded-355849718?src=H2cjwlxuQhyDFI3PxNSmA-1-10	
Animal Narrators		

<u>Country – Tawny owl</u>	https://www.shutterstock.com/image-vector/cute-handdrawn-grey-owl-369959711?src=FqtGplyIzYCGmsvopEQ2cQ-1-17	
<u>Ocean – Rock hopper penguin</u>	https://www.shutterstock.com/image-vector/happy-cartoon-penguin-rockhopper-on-ice-329375747?src=o6lnNoXMbvOMOSB1GxHUEA-1-7	
<u>Tundra – Moose</u>	https://www.shutterstock.com/image-vector/cute-happy-cartoon-moose-eurasian-elk-364728419?src=6MigEzCYSgvd3D4BN-LNMw-1-4	
<u>Rainforest – Emerald tree boa</u>	https://www.shutterstock.com/image-vector/hanging-emerald-tree-boa-221421178?src=hZau1yiXDwb2hE3bKvQhsg-1-0	

Chain - Countryside

<u>Cut down trees</u>	https://www.shutterstock.com/image-photo/professional-lumberjack-cuts-down-tree-forest-526557511?src=PF--OsuaXeBVoTVx2HtAlw-1-0	
<u>Pesticide spraying</u>	https://www.shutterstock.com/image-photo/tractor-spraying-field-corn-419658139?src=yQ3sBqfZOLwo_otAPsNTkg-1-1	
<u>Fertilising grass</u>	https://www.shutterstock.com/image-photo/farmer-tractor-spraying-fertilizer-onto-grass-191895806?src=QSu67w2hSs-8cm8Hh6av5g-1-1	

<u>Cows drinking</u>	https://www.shutterstock.com/image-photo/herd-young-calves-drinking-water-sunset-164350595?src=COE0WQunXKY5TnKjZ2HOTg-1-5	 www.shutterstock.com - 164350595
<u>Tractor</u>	https://www.shutterstock.com/image-photo/old-tractor-on-grass-field-96227504?src=1zA4OYnfib0Ok9Kyw2SVtA-1-15	 www.shutterstock.com - 96227504
<u>Cows passing wind</u>	https://www.shutterstock.com/image-photo/weapons-mass-destruction-methane-gas-produced-575203867?src=kdqFa3Mccv8v6a5f913xqA-1-4	 www.shutterstock.com - 575203867
<u>Lorry</u>	https://www.shutterstock.com/image-photo/white-trucks-driving-on-highway-winding-565702024?src=QZxgzhPZzgobtb09B7BiGw-1-0	 www.shutterstock.com - 565702024
<u>Slaughter house interior</u>	https://www.shutterstock.com/image-photo/interior-slaughterhouse-433515385?src=rj9N5zc7ii-BPaXV1WpYpA-1-10	 www.shutterstock.com - 433515385
<u>Packaged beef</u>	https://www.shutterstock.com/image-photo/slices-thin-meat-cutlets-on-conveyor-554651608?src=oYWMK4AeR58EmFt3jr8tdg-1-31	 www.shutterstock.com - 554651608
<u>Plane</u>	https://www.shutterstock.com/image-photo/new-york-december-20-boeing-747-92732260?src=yzHwZHgFrcFgiSBH-5WT7Q-1-15	 www.shutterstock.com - 92732260
<u>Restaurant kitchen</u>	https://www.shutterstock.com/image-photo/empty-restaurant-kitchen-professional-equipment-365164136?src=7BiYhLxcrWrl5gc9LEL5hQ-1-9	 www.shutterstock.com - 365164136
<u>Cars</u>	https://www.shutterstock.com/image-photo/cars-on-highway-traffic-jam-420463105?src=g6B4E5ZgWiGMIQioQREwjg-1-4	 www.shutterstock.com - 420463105

<u>Landfill</u>	https://www.shutterstock.com/image-photo/dump-truck-unloading-waste-on-landfill-625429940?src=il_X0uqcnFAATxAJYe0gAA-1-3	
Chain - Ocean		
<u>Drilling rigs</u>	https://www.shutterstock.com/image-photo/offshore-oil-rig-drilling-platform-offshore-platform-372867391?src=w1uvWW8CicC8ZkXLexxSBA-1-4	
<u>Ship</u>	https://www.shutterstock.com/image-photo/cargo-container-ship-mediterranean-coast-101212576?src=HOFzHcRjgNzK2Yte4YG0rA-1-6	
<u>Cleaning in progress</u>	https://www.shutterstock.com/image-photo/cleaning-progress-yellow-sign-blue-bucket-728020225?src=l8QOGMf_jweLcPynmtl5cA-1-1	
<u>Freight train</u>	https://www.shutterstock.com/image-photo/freight-train-tank-cars-transportation-petroleum-435120352?src=i7NLKR7yJJED8eFEaf5O8Q-1-9	
<u>Empty bottles</u>	https://www.shutterstock.com/image-photo/group-empty-plastic-bottles-92864185?src=j2WTZJYzUOTRqHZGRc5VHw-4-40	
<u>Bottle factory</u>	https://www.shutterstock.com/image-photo/filling-bottles-water-577772386?src=euk5_CFqsWRDsaA77Uc6fg-1-40	

<u>Packaged bottle</u>	https://www.shutterstock.com/image-illustration/pet-packed-bottled-water-on-hand-616202342?src=I1WWAYoLmRpjv6v1jZD_6w-2-43	
Chain – Arctic Tundra		
<u>Gas leak</u>	https://www.shutterstock.com/image-photo/corrosion-rusty-valve-gas-leak-pipeline-720415198?src=8A-wtCt6RMXlc8GBWFhaag-1-31	
<u>Power station</u>	https://www.shutterstock.com/image-photo/sun-setting-over-electrical-substation-131296874?src=CLeM2mTgZsK1VI70WbpQDg-1-4	
<u>Turbines</u>	https://www.shutterstock.com/image-photo/industry-installations-power-turbines-49207051?src=zj_5J7nh9yCGsGQA-eFivg-1-15	
<u>Pylons</u>	https://www.shutterstock.com/image-photo/electricity-pylons-going-into-distance-over-622252427?src=85nN-zsNLjkMuZbwWiku7Q-1-24	
<u>TV on standby</u>	https://www.shutterstock.com/image-photo/led-tv-on-stand-black-wall-381753865?src=yfuToBNNAGNgabuQf5k0g-1-12	
Chain - Rainforest		
<u>Phone parts</u>	https://www.shutterstock.com/image-photo/flat-lay-top-view-smartphone-components-639918757?src=2-vhTNO5cBSs-HRCWmr_Qg-1-9	
<u>Packaged phones</u>	https://www.shutterstock.com/image-photo/bangkok-thailand-november-20-2016-unboxing-519559999?src=eMjBuv_rbObWgiOaMQYZVQ-2-12	

<u>Phone shop interior</u>	https://www.shutterstock.com/image-photo/bologna-italy-august-6-people-visiting-110680685?src=5dNzR7qwi34AklZfxex62Q-1-1	 www.shutterstock.com - 110680685
<u>Phones on charge</u>	https://www.shutterstock.com/image-photo/mobile-smart-phones-charging-on-wooden-261683285?src=VRFvBjLaJoxnyEb45O07Zg-1-15	 www.shutterstock.com - 261683285
<u>Broken phones</u>	https://www.shutterstock.com/image-photo/tomsk-russia-june-29-2017-used-676523221?src=pmk_Eq32-L0kSa4hfHLndA-1-96	 www.shutterstock.com - 676523221