Robotics Quest Guide

PLANETEERS
A STEAM CRAFT ADVENTURE

SERIOUS GAMING IN THE CLASSROOM

RECOGNIZING THE POWER OF WEB CREATIVITY
W3 AWARDS
2017 SILVER WINNER

GESS
EDUCATION
AWARDS
WINNER
2017

Planeteers Robotics Curriculum

About.

The Planeteers Robotics Guide is a series of laddered lessons that aim to develop learners technology, engineering and coding skills from basic to advanced. The curriculum has been designed by educational experts and is delivered in a guided fashion as part of the Planeteers game quests. Initial skill building provides the foundation of background knowledge necessary in order to begin learning skills at the next level. The learning skills are cumulative and learners develop robotics skills in a 3D sandbox enviroment.

How to Read the Guide

The infographic below illustrates how the robotics lessons are organized. There are five levels of complexity, with an extra credit or fifth level encouraging game design projects that are culmination of the skills built in previous levels. Learners earn experience points (XP) towards badges based on completing quests mapped to key learning objectives.

Quest Code | **Learning Objectives mapped to level** | **STEAM connections** | **Quest Introduction** | **Fun Facts related to quest concept** | **Badges earned from completing quests with %XP weighting**

Quest Code	Learning Objectives	STEAM Integrations	Quest Summary	Quest Introduction	Example Quest Fun Fact	Example Quest Fun Fact	Badge Achievement	% XP	Badge Achievement	% XP
TC1.1	**Basics of coding & Block Code** Identify parts of the coding UI: commands, scripts area, stage Creates sequence of steps (an algorithm) for a bot to follow.	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation)	Create a Code Sequence	Wow you've discovered a space relic! Seems like this bot is not working? Do a systems check and then try to restor the bot by fixing the bugs in its blockly code.	Robots like me and this bot here only follow instructions we're given. Programming is giving a sequence of instructions to a computer to follow. Luckily for you I'm programmed to be helpful!	Sometimes a bot can go haywire, kind of like if bugs got into its wiring. Most 'bugs' are just problems with its code which are found and fixed by 'DE-BUGGING' which is when you try to fix the code.	Debugger	25%	Robot Repairer	25%
TC1.2	**Connect/Fix Block Codes** Explain and validate the importance of sequencing codes to create algorithms. Introduce and emphasize the concept of debugging	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation)	Debug the code to fix the robot	This planet has strong magnetic fields, which seem to have messed up this robot? It cannot be remote controlled anymore. Try debugging the blockly code to fix it.	All robots need instruction, coded as detailed STEPS that are programed in their robot brain or CPU. Take notes! There are lots of words coming your way! The program's code has steps called ALGORITHMS. The instructions are called COMMANDS.. A LOOP is a sequence of commands repeated a number of times.	If you have a bug, no problem! A simple way to debug in blockly is to use the PLAY button so the code RUNS while observing your robot. Look for broken code as the program runs or for problems with the robot trying to complete its task. Compare the two to check if the sequence is correct or where it needs fixing.	Debugger	25%	Remoting 101	25%
TC1.3	**Simple Events & Triggers** Program a bot to respond to external or internal changes (triggers). using OnClick and OnActive.	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Science (Biological Sciences)	Add sound FX to your robot!	The old bot is so quiet? Use TRIGGERS to ugrade it's code so the bot can express itself with beeps when ACTIVE and when SELECTED.	Wow tinkering the bots already huh? Just stay away from my systems ok! An **EVENT** is an action that causes something to TRIGGER or happen in code. Events like **ONACTIVE** trigger commands to run when the robot is active. **ONCLICK** triggers commands when the robot is clicked.	To trigger sound effects when the bot is active, use the **ONACTIVE** event code with sound code scripts. You can use the **instrument** block code to play different notes, or cheat and use the **play sound effect** code!	Blockly Code 101	25%	SoundFX	25%
TC1.4	**Events & Loops** Differentiate events from loops Use loops to simplify repetitive code	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Technology (Systems Analysis)	Debug the Sentry Drone	Somethings up with the drones systems, it keeps changing color when moving. It should be playing a motion sound instead. Check the code and fix?.	Have you ever felt like your stuck, and going around in circles? That is because you were in a LOOP. These can be great when you have to do something repetitive but don't want to write LOTS of code. Sometimes bots or drones can get stuck in a LOOP and need debugging to help it do what it is supposed to.	**LOOPS** are commands that trigger actions to happen over and over again, usually for a set number of times. This sentry bot's AI uses loops to replay sound while in motion. Check the code inside the loop to debug whats wrong.	Blockly Code 101	25%	Basic Commands	25%

2

Planeteers Robotics Curriculum

Level 1 Robotics Quests

Quest Code	Learning Objectives	STEAM Integrations	Quest Summary	Quest Introduction	Example Quest Fun Fact	Example Quest Fun Fact	Badge Achievement	% XP	Badge Achievement	% XP
TC1.1	**Basics of coding & Block Code** Identify parts of the coding UI: commands, scripts area, stage Creates sequence of steps (an algorithm) for a bot to follow.	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation)	Create a Code Sequence	Wow you've discovered a space relic! Seems like this bot is not working? Do a systems check and then try to restor the bot by fixing the bugs in its blockly code.	Robots like me and this bot here only follow instructions we're given. Programming is giving a sequence of instructions to a computer to follow. Luckily for you I'm programmed to be helpful!	Sometimes a bot can go haywire, kind of like if bugs got into its wiring. Most 'bugs' are just problems with its code which are found and fixed by 'DE-BUGGING' which is when you try to fix the code.	Debugger	25%	Robot Repairer	25%
TC1.2	**Connect/Fix Block Codes** Explain and validate the importance of sequencing codes to create algorithms. Introduce and emphasize the concept of debugging	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation)	Debug the code to fix the robot	This planet has strong magnetic fields, which seem to have messed up this robot? It cannot be remote controlled anymore. Try debugging the blockly code to fix it.	All robots need instruction, coded as detailed STEPS that are programed in their robot brain or CPU. Take notes! There are lots of words coming your way! The program's code has steps called ALGORITHMS. The instructions are called COMMANDS.. A LOOP is a sequence of commands repeated a number of times.	If you have a bug, no problem! A simple way to debug in blockly is to use the PLAY button so the code RUNS while observing your robot. Look for broken code as the program runs or for problems with the robot trying to complete its task. Compare the two to check if the sequence is correct or where it needs fixing.	Debugger	25%	Remoting 101	25%
TC1.3	**Simple Events & Triggers** Program a bot to respond to external or internal changes (triggers). using OnClick and OnActive.	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Science (Biological Sciences)	Add sound FX to your robot!	The old bot is so quiet! Use TRIGGERS to ugrade it's code so the bot can express itself with beeps when ACTIVE and when SELECTED.	Wow tinkering the bots already huh? Just stay away from my systems ok! An **EVENT** is an action that causes something to TRIGGER or happen in code. Events like **ONACTIVE** trigger commands to run when the robot is active. **ONCLICK** triggers commands when the robot is clicked.	To trigger sound effects when the bot is active, use the **ONACTIVE** event code with sound code scripts. You can use the **instrument** block code to play different notes, or cheat and use the **play sound effect** code!	Blockly Code 101	25%	SoundFX	25%
TC1.4	**Events & Loops** Differentiate events from loops Use loops to simplify repetitive code	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Technology (Systems Analysis)	Debug the Sentry Drone	Somethings up with the drones systems, it keeps changing color when moving. It should be playing a motion sound instead. Check the code and fix?.	Have you ever felt like your stuck, and going around in circles? That is because you were in a LOOP. These can be great when you have to do something repetitive but don't want to write LOTS of code. Sometimes bots or drones can get stuck in a LOOP and need debugging to help it do what it is supposed to.	**LOOPS** are commands that trigger actions to happen over and over again, usually for a set number of times. This sentry bot's AI uses loops to replay sound while in motion. Check the code inside the loop to debug whats wrong.	Blockly Code 101	25%	Basic Commands	25%
TC1.5	**Simple Shapes, Sequencing &Loops** Code robots to form shapes and angles using repetition and loops Create loops to create complicated repetitive behaviour	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Mathematics (Calculating) Mathematics (Shapes and Representation)	Fix the Drone's navigation code	This Sentry Drone isnt navigating as it's supposed to. It should be scanning a square area. Check its **MOTION CODE** and debug the issue so its back on track.	LOOPS are great! If you think about it, ALL shapes are just lines joined together at angles. If you wanted to move in a square you could just move forward, turn left 90 degrees and repeat (loop) those steps three more times to close the shape! This bot's navigation uses LOOPS to draw its square path by repeating move and turn steps.	In coding a **SEQUENCE** means the ordered steps in a program. Seems like there Is something wrong with this bots sequencing since it seems to be making the right moves, but not in the right order! Check the code inside the LOOP to debug whats wrong.	Debugger	25%	Robot Repairer	25%

3

Planeteers Robotics Curriculum

Level 1 Robotics Quests

STEAM CRAFT EDU

Quest Code	Learning Objectives	STEAM Integrations	Quest Summary	Quest Introduction	Example Quest Fun Fact	Example Quest Fun Fact	Badge Achievement	% XP	Badge Achievement	% XP
TC1.6	**Learn about Conditional Logic** Use conditional IF statements to control a bot.	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation)	Fix the Glitch!	Wowzers! Seems there has been a glitch in your drone's code, the REMOTE CONTROL is not longer working. The code has been lost and needs to be reprogrammed!	A CONDITIONAL, is a statement that only runs if something else happens first. Checking conditions is very important in coding. If you ask yourself, "Am I hungry?" and reply, "No!" and then never ask again, you'll never know if you should get food. IF conditional statements are great in loops if you need to check for something over and over again and can't use a trigger.	So basically, us robots ask a lot of questions! The CONDITION is the response to those questions. If the response is YES, the condition is TRUE. If the response is not yes, then the condition is FALSE and the program will not do anything. IF statements like this are called CONTROL STRUCTURES because they control the flow of a program. Cool Huh!	Basic AI	25%	Blockly Code 101	25%
TC1.7	**Toggle variables** Use toggle switch code to change a setting from 1 to 0 or TRUE to FALSE	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Art (Photography)	Bring Camera systems online!	Getting data from your drone is certainly useful, but seeing what it sees is even better! Add code to TOGGLE its camera systems on-off so you can take pictures!	Down deep computers only know about 1's and 0's, On and Off or TRUE and FALSE. 'TOGGLING' means to change a value from what it currently is to the other option. e.g. From TRUE to "FALSE" or from "OFF" to "ON"	Did you know that CONDITIONS that can either be TRUE or FALSE are called BOOLEAN blocks?. If the condition is set to TRUE, then it is ACTIVE, if set to FALSE then it is NOT ACTIVE.	Basic Commands	25%	Remoting 101	25%
TC1.8	**IF/ELSE Statements** Use a single conditional IF-ELSE statement to create reactive bot behaviour	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation)	Enable Night Vision!	Sensors for sound, touch, temperature and navigation give robots information about their environment. Activate the drone's night sensors so its lights turn on automatically.	Here are those useful IF statements again! Sometimes you need your Drone to do something if the IF statement is TRUE and something else if it is FALSE. We can do this by adding an ELSE to the IF statement. Now our Drone can perform one action if the condition is TRUE, and a different action if the condition is FALSE!	Night vision is being able to see in the dark. Some animals, like cats, are esspecially adapted to see well in the dark. Humans do not have good night vision. Robot use special sensors to see in low light. The three main types of night vision technology are low-light imaging, thermal imaging and near-infrared illumination!	Basic AI	25%	Robotics 101	25%

4

Planeteers Robotics Curriculum

Level 2 Robotics Quests

STEAM Concept	Quest Code	Learning Objectives	STEAM Integrations	Quest Summary	Quest Introduction	Example Quest Fun Fact	Example Quest Fun Fact	Badge Achievement	% XP	Badge Achievement	% XP
Physical Sciences	SP1.2	Links direction of force with movement	Engineering (Design Process for Innovation)	Base camp marker drone!	So we never get lost on night excursions, create a verticle-only flying drone with a light to mark base camp from a distance.	A force is basically a push or pull. Applying force affects the motion of an object, causing it to gain speed, slow down, to stop, or to change direction. The direction in which the object moves can be controlled by the direction and amount of force applied to it.	Propellers are machines that move an object forward when their blades are turned really fast. As the blades rotate, they deflect air backwards, and this air pushes forward on the blades. This force is called thrust and gives airplanes and helicopters the ability to escape the pull of gravity and fly.	Physics 101	25%	Motion & Matter	25%
Robotics	TR1.1	Introduction to robots	Technology (Making, Coding) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation)	Craft a robot Sentry.	Who's speedy and gets tasks done right? A robot. Craft a Sentry Bot to guard base camp.	Arms, sensors, and wheels, oh my! Robots can have them all. A robot has four essential characteristics: sensing, movement, energy and intelligence. Artificial Intelligence (AI) comes from the instructions stored in the robot's central processing unit or CPU.	Sensors for sound, touch, temperature and navigation give robots information about their environment. Some robots are like humanoids. They have arms and legs, while bots for exploration may have wheels, tracks, or propellers.	Robotics 101	25%	Components	25%
Robotics	TC2.3	**Nested IF Statements - Part 1** Uses Looped nested IF statements to update complicated behaviours	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Science (Biological Sciences)	Upgrade your Bot's AI	Let's give this Bot some personality! It's hard to 'see' intellgience so let's upgrade the Bot's AI to give feedback so we know what your Bot is thinking.	Try creating some statements while the Bot is patrolling versus when night falls. For example when the sun goes down, your Bot could say: "High Alert Mode" or "Switching to Night Vision!" Try using Use different types of text boxes to convey different emotions.	Combining conditionals and loops allows your robot to do many different, but simple tasks. Now that AI is getting more advanced robots are doing complex things like making music, recognising illnesses and exploring the galaxy!	AI Designer	25%	Robotics Coder	25%
Robotics	TC2.6	**Nested IF/ELSE Statements** Uses loop Nested IF/Else statements to update complicated behaviours	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Technology (Systems Analysis) Science (Biological Sciences)	Sentry Bot AI Upgrade	Upgrade your Sentry Bot's AI and sensing so that it responds to changes in its environment.	This bot aint too bright! Let's give it some more things to think about. Add code so it knows when we are within 7m of its position, trigger a greeting using a speech bubble and voice. Enhance the code so the bot will react to us moving closer, if we come within 4m the bot should flash a light, and within 3 meters, make it change color.	Nesting' some IF-ELSE statements inside other IF-ELSE statements helps your bot think in ways more complicated than a single TRUE and FALSE question.	Robotics Coder	25%	AI Designer	25%

Planeteers Robotics Curriculum

Level 3 Robotics Quests

Quest Code	Learning Objectives	STEAM Integrations	Quest Summary	Quest Introduction	Example Quest Fun Fact	Example Quest Fun Fact	Badge Achievement	% XP	Badge Achievement	% XP
TC3.1	**Debugging Logic** Debugs code with multiple logical errors	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Technology (Systems Analysis) Technology (Power and Energy)	Repair the Broken Drone	Woot! Looks like we found another relic bot. My scanners are reading no battery charge. Fix the battery charge controller so the Drone's systems come online.	Hacking can be used for both good and bad! This Drone is in need of fixing so you'll need to understand and hack it to make it work again.	If you have a bug, no problem! A simple way to debug in blockly is to use the play button so the code runs while observing your robot. Look for broken code as the program runs or for problems with the robot trying to complete its task. Compare the two to check if the sequence is correct or where it needs fixing.	Hacker	25%	Drone Technician	25%
TC3.2	**Optimizing & Reusing Code** Applies the same logic structure in different situations. Refer to TC2.6	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Technology (Systems Analysis) Science (Biological Sciences)	Fix the Drone's Sentry Systems	Diagnostics are running, and guess what? This Drone is an Alien Sentry Bot! Fix the Drone's sentry code, it should grow bigger and turn lights on when Aliens are detected. Woot!	Those alien invaders have their own inbuilt "IF statements" too! If it is bright they run away! I wonder if we can use this to our advantage?	Robots that can function on their own are called "autonomous" and are very useful in remote exploring, space flight, and even dangerous missions! Advanced autonomous robots have lots of sensors and an AI system can learn from the environment, experience, and build on what it can do.	Robotics Coder	25%	Drone Technician	25%
TC3.3	**Variables** Modifies a single variables' value Note: Inbuilt variables are actually introduced earlier	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Technology (Systems Analysis)	Upgrade & Remote Your Drone	The Desert is super hot! Mission Control suggest we use the Drone to help explore. Upgrade its anti-gravity capacitator so it can hover while performing scans. Then enable remote control so you can pilot the Drone.	Hi there! If something can change then it is described as 'variable'. How are you feeling today? A variable such as your emotion could be a word such as 'happy' or a number like 1-10. I hope your human variables are good today!	Almost everything is variable. The weather can be sunny or rainy, a score can be any number, and the power can be on or off. Remember toggles from an earlier mission? That is a 'binary variable', which means it can only be two different things like ON or OFF.	Drone Technician	25%	Coding Cadet	25%
TC3.4	**Programmed Variables - Part 1** Modifies multiple variables using complex logic	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Art (Colour and Style) Science (Biological Sciences)	Add Stealth Tech!	Being able to blend in with the environment makes surveys easier. Use Block Code to upgrade the Drone with Stealth mode. Program its systems to change color to match the terrain its exploring. Chane to color brown to blend with the desert terrain and blue when in water.	An object or bot can have lots of variables to describe it. Things such as colour, size and texture are all different variables you can modify with code. So you don't have to keep changing variables yourself how about you try putting them in some IF/ELSE statements so that they change on their own?	Advanced stealth technology uses mirrors or holograms to make objects invisible. Mirrors reflect an image of the environment to blend the object into its surrounds, while holograms recreate an image of the surrounds and project it around the object. Hey! You just disappeared!	Drone Technician	25%	Hacker	25%
TC3.5	**Debugging Loops** Debugs loop errors	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Art (Photography)	Fix the Drone's Camera	Woot! The Drone has had some serious upgrades and is almost mission ready. I'm detecting a glitch with its camera systems. Fix the Drone's camera, and take some test photos to check its working properly.	Loops are great to check something repeatedly without alot of code. Looks like something is wrong with how long the Camera Systems loop is running for. Can you figure it out?	Aerial photos are usually taken with a camera mounted on the bottom of a drone or aircraft. An aerial photo allows a whole area to be observed rather than a portion of it. This way we can see survey resources, measure the length of rivers or size of land masses, and see patterns including how things might change over time.	Coding Cadet	25%	AI Designer	25%

Planeteers Robotics Curriculum

Level 4 Robotics Quests

Quest Code	Learning Objectives	STEAM Integrations	Quest Summary	Quest Introduction	Example Quest Fun Fact	Example Quest Fun Fact	Badge Achievement	% XP	Badge Achievement	% XP
TC4.3	**Simulations** Simulate complex animal behaviours	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Engineering (Food Production) Science (Biological Sciences)	Code a Cattle Drone!	Looking after your animals is hard work! Make it easier by coding a Drone from your inventory to round up farm animals. Pick a target like a shelter or barn, then send your Drone out at sun down to round up your furry friends and lead them home before nightfall.	Did you know that a drone is a type of robot that is classified as an Unmanned Aerial Vehicle (UAV) controlled by an autopilot through a remote control or computer program?	Like all robots, drones are made up of many components. Some of the main components include, a frame, propellers, motors, landing gear, battery, flight controllers, power distributer, remote control, electronic speed controllers (ECS) and camera. Sensors, transmitters and receivers can also be fitted. Phew!	Robot Maker	25%	Farming Tech	25%
TC4.4	**Creating Functions** Creates a function	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Engineering (Food Production) Science (Biological Sciences)	Build a Farming Bot!	Using Bots to automate stuff sure makes life easier! Code another farm bot to tend to a crop area. Instruct your robot helper to water and feed the crop.	Time to apply your knowledge of variables and functions. It's a bit of extra work now but will save you time in the future when you have to solve similar problems.	Arms, sensors, and wheels, oh my! Robots can have them all. A robot has four essential characteristics: sensing, movement, energy and intelligence. Artificial Intelligence (AI) comes from the instructions stored in the robot's central processing unit or CPU.	Automation	25%	Farming Tech	25%
TC4.5	**Code Re-use - Part 2** Applies player-made code chunks/functions to solve similar problems	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Engineering (Food Production) Science (Biological Sciences)	Farming Bot Upgrade	Upgrade your farming Bot to feed your animals. In your previous mission you made code that can be used to solve different but similar problems. Now you can easily repeat the farming bot's behaviour in similar ways without wasting time re-coding everything.	Some robots don't need someone to control them! Cool! They're called an autonomous robot. Robots that can function on their own are very useful in remote exploring, space flight, and even dangerous missions in place of people!	Advanced autonomous robots have lots of sensors and an AI system can learn from the environment, experience, and build on what it can do.	Robot Maker	25%	Coding Specialist	25%
TC4.6	**Automation - Part 1** Automates simple farming tasks	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation) Engineering (Food Production) Science (Biological Sciences)	Automate Crop Harvests!	Ok lets take our farming automation to the next level! Build a harvesting Bot using the builder, then add block code so it's able to harvest crops and fill your refigerator unit.	Automating your farm lets you spend time doing more exciting things like exploring, building and learning. You're harvest Bot can even do the job better than you if you program it well enough!	Food spoils when it gets old. This is because bacteria, yeasts and fungi feed on the food and break it down. These micro-organisms grow much slower at lower temperatures, so the cooler you can keep your food, the longer it will last. Thats where a refrigerator, or in space explorer terms: cooler unit, can help!	Automation	25%	Robot Maker	25%

Planeteers Robotics Curriculum

Level 5 Robotics Quests

Quest Code	Learning Objectives	STEAM Integrations	Quest Summary	Quest Introduction	Example Quest Fun Fact	Example Quest Fun Fact	Badge Achievement	% XP	Badge Achievement	% XP
TC5.4	**Game Making** NPCs and AI. Targets and timers.	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation)	Goal Kick Challenge	Create a goal kick game with an AI goal keeper, timer and score. Code an NPC bot to protect the goals while your player avatar takes shots at scoring using a block ball. Keep score against a timer. Add sound and effects.	Self Discovery	Self Discovery	NPCs	100%	Physics	50%
TC5.5	**Game Making** NPCs and AI. Collision effects, targets and timers.	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation)	Robot Sumo	Create a robot Sumo game using two bots. Create a mat or ring, add controls to your bots and collision sound effects. Play against a friend, the first bot to be bounced out of the ring loses!	Self Discovery	Self Discovery	Games Guru	50%	Blockly Master	50%
TC5.6	**Game Making** Remote controlled Characters. Targets and timers.	Technology (Making) Engineering (Simple and Complex Machines) Engineering (Design Process for Innovation)	Ready Set Go!	Create a racing game with a track and an end target or finish line. Use bots controlled by players, or build remote controlled cars in builder. Set the rule that the first bot to reach the target and cross the finish line wins!	Self Discovery	Self Discovery	Games Guru	25%	Blockly Master	50%

STEAM CRAFT

3D game-based learning platform for STEAM

STEAM CRAFT
EDU