Track Stars!

Minecraft: Education Game

Teacher Guide

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Welcome to *Track Stars!*

We hope your students enjoy this interactive and educational Minecraft: Education game. The purpose of this game is to encourage students to take personal responsibility for theirs, and others, safety at level crossings through pedestrian safety focused missions, with the goal to affect positive behaviour change. Students will have an in-game 'robot friend' named Elliot, who they will teach how to independently and safely cross active and passive level crossings, via several missions requiring exploration, research, and testing. As a result, students will be actively reflecting on their own decisions and behaviours at and around level crossings in the real world.

A coding element, core to a mission within the game, engages students with the technical systems involved with the development and management of their robot friend – thereby building a connection to STEM subjects: science, technology, engineering, maths.

Students will also be able to design and build out their local train station and the surrounding infrastructure and environment to reflect their own community, thereby creating a connection with and ownership over the game content and environment.

A game of this nature, focusing on positive behaviour change via in-game demonstration, research, and testing, and which requires students to demonstrate, plan, analyse and observe safe behaviour and decision making at and around level crossings, directly supports Queensland Rail's focus on and commitment to Safety Comes First. Always.

Please note this product is not affiliated with, endorsed by, or sponsored by Mojang or Microsoft.

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Track Stars Quick Play Support Guide

Mission One

Students enter the game at Safety Springs Railway Station, where they are welcomed by Station Master Meryn Squares. During Rail Safety Week, volunteers from the town will be stationed at the level crossings to oversee and ensure proper use of the crossings. These volunteers will guide students as they participate in three primary crossing-related missions.

Arrive in the world	Collect Robot Elliot	Building Robot Elliot a home
Station Master Mervyn Squares explains that it is Rail Safety Week, and the student needs to show how much they know about safely using rail crossings, around railway tracks and at railway stations. The Station Master has buttons for the four rules STOP-LOOK-LISTEN-THINK (linking each to a brief explanation) and gives the student access to a quick quiz. Trains will not run in Safety Springs until the student demonstrates a safe first crossing.	**Crossing One:** Active crossing, road-based with boom gates, flashing lights, alarm, and signage and pedestrian gates. The compass guides students to the first crossing and a volunteer invites them to demonstrate crossing safely. STOP-LOOK-LISTEN-THINK. After successfully crossing, the next volunteer will give them their reward; a robot named Robot Elliot. It is now their job to teach Robot Elliot to cross safely in the town. But first, Robot Elliot needs a home.	Students must go to the residential area (by following the compass) and choose a plot. Robot Elliot will follow them to the housing area, sit and watch them build a fun home. When the student has built their home, they return to the town crossing where the volunteer tells them this ends Mission One and gives them their reward, a first badge and Robot Elliot's memory upgrade.

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Mission Two

Students navigate to the Safety Springs School Library and are greeted by the Principal, School Secretary and Librarian (NPCs). The Librarian reminds the student that this is Rail Safety Week in their town. Throughout the week volunteers (town's people) have been supervising everyone's use of the crossings and this will continue in Mission Two.

Conduct safety research	Learn to code	Program Robot Elliot's safe crossing
Students head to the Safety Springs Library where they will find four computers that will offer fun ways to learn about why we have rail crossing rules. They will Read, Watch, Do and Play in the Safety Springs School Library. When students have completed their research (10 minutes total exploration), the Librarian will give them the code book to program Robot Elliot's actions.	*(Get your coding tool and practice guiding Robot Elliot in the School Library)* With the coding tool, students can experiment with directing Robot Elliot's actions. They assess out their coding skills on the library crossing mat. When they feel they have learned how to code Robot Elliot on the practice crossing, they can follow the compass again to complete the second mission. They head out to the next town crossing, not forgetting that trains are now scheduled to pass.	**Crossing Two:** Passive pedestrian-based crossing with minimal signage At the next crossing students can cross first to check what is required. They create the code for Robot Elliot and the volunteer assesses it before allowing Robot Elliot to cross. We do not want Robot Elliot to be put in any harm, do we? When their code is deemed safe, they can send Robot Elliot across and follow. The volunteer will then offer them the next badge and a fun activity as they have now finished Mission Two. Students then head off to meet a friend at their home.

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Mission Three

Students head to their friend's house only to find the friend has already gone to the oval. The friend's mother tells them she knows they are looking for a third crossing for their missions. There is one on the way to the oval that could work for the third mission.

The final badge	Programs Robot Elliot's safe crossing	Return to the Station Master for your reward
Arriving at the friend's house the student learns that the friend has already gone to the oval, and they can catch them up there. The student is told by the friend's mother (also a volunteer) that there is a third crossing on the way to the oval and that could help them complete their last mission. Students will need to navigate Robot Elliot safely across that crossing to get their final badge.	**Crossing Three:** Passive crossing, road based with pedestrian walkthrough area and signage. The student heads out to observe the crossing then codes Robot Elliot to cross. When the code is approved by the friend's mother, Robot Elliot is set free to cross. Students will observe Robot Elliot crossing then meet up with him on the other side with their friend. Robot Elliot receives a message from Station Master Mervyn Squares requesting they return to see him.	Students return to the railway station with Eliott to meet with Station Master Mervyn Squares and receive their final badge for Mission 3. The Station Master tells them it is time for Robot Elliot to move on to help other towns in learning about safe level crossing. *A loud train whistle is heard to celebrate the end of the game.*

Curriculum Links

Health and Physical Education

Personal, Social and Community Health: Being healthy, safe, and active.

Content Descriptors Years 3 and 4
- Describe and apply strategies that can be used in situations that make them feel uncomfortable or unsafe (ACPPS035)
- Identify and practise strategies to promote health, safety, and wellbeing (ACPPS036)

Creative and Critical Thinking

Reasoning
- In Years 3–6, students develop an increasingly sophisticated capacity for logical thought and actions, such as evaluating, explaining, and generalising. Students are reasoning mathematically when they explain their thinking, when they adapt the known to the unknown, and when they transfer learning from one context to another and explain their choices.

Humanities and Social Sciences

Knowledge and Understanding / Civics and citizenship.

Year 3
- Who makes rules, why rules are important, and the consequences of rules not being followed (ACHASSK071)

Year 4
- The differences between 'rules' and 'laws,' why laws are important and how they affect the lives of people, including experiences of Aboriginal and Torres Strait Islander Peoples (ACHASSK092)

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Lesson Plans

Lesson One

Pre-Minecraft activity

Discuss with students what they know about using rail crossings.

- Are there any in your town? What did you notice about them?
- What do people on foot (pedestrians) need to do to use crossings safely?
- What do they need to look out for?
- Do you know any rules for how to safely use rail crossings?
- What kinds of behaviour might be considered dangerous and why?

In Minecraft

Students arrive at the Safety Springs Railway Station and are greeted by Station Master Mervyn Squares. The Station Master describes the Rail Safety Week activities around the town and sets the students off on their first mission.

They will:
- Demonstrate making a safe crossing.
- Receive their robot friend Robot Elliot who follows them in the world.
- Go to the residential area and build a house for them and their friend.
- Return to the crossing and receive their robot memory upgrade.
- Receive their first badge for completing Mission One.

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To demonstrate conducting a safe crossing

Prompt	Timing	Students need to...
STOP	Stand on the yellow line	move to the yellow line, stop, stand, and do not cross.
LOOK	LEFT for 2 seconds	use the mouse (or touch pad/screen) to turn to look left.
	RIGHT for 2 seconds	use the mouse (or touch pad/screen) to turn to look right.
LISTEN	For 2 seconds	stand still to listen for trains.
THINK	For 2 seconds	think about whether it is safe to cross.
CROSS	Move across the crossing	walk swiftly do not run or delay crossing.

* The game tracking will monitor that students conduct these steps in order and for the required amount of time. Students need to approximate the seconds for theirs and Robot Elliot's actions. This can be done by using one of the fun mnemonics "one, one thousand, two, one thousand" or "one Mississippi, two Mississippi."

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Lesson Two

Pre-Minecraft activity

Demonstrate to students how to access the resources in the Minecraft school library. Decide whether you want the students to take notes on what they discover or if working in pairs they might discuss what they see in each resource.

In Minecraft

Students arrive at the Safety Springs School Library to be greeted by the Librarian. They are instructed to explore educational resources on computers about the library (written, video, games, and posters) to further learn about safely using rail crossings.

The Resources

READ	
	Resources for reading
	Students learn about the rules for rail crossing safety and why we need them. These are great reminders of why we need to always be safe around trains, tracks and crossings. Students are encouraged to explore at least two of these.
	1. *Watch Out for Trains:* https://tracksafefoundation.com.au/watchoutfortrains/
	2. *Avoid Harm Stop Before the Boom Arm:* https://www.queenslandrail.com.au/aboutus/campaigns/avoid-harm-stop-before-the-boom-arm
	3. *Level crossing safety:* https://www.queenslandrail.com.au/forcustomers/safetysecurity/levelcrossings
	4. *All aboard with the Safety Crew:* https://tracksafefoundation.com.au/school-education/primary-school/

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	5. *Railsmart:* https://www.queenslandrail.com.au/inthecommunity/railsafety/rail-safety-tips
WATCH	***Resources to watch*** These stories help us understand why we must be so careful when crossing tracks. The videos remind us of what could happen if we don't obey all signs and signals. Students are encouraged to explore at least two of these. 1. *Track Tube*: https://youtu.be/85xCGz1asyQ 2. *Rail Crossing Campaign:* https://www.youtube.com/watch?v=E2BrSO0hh7E 3. *Tracksville*: https://www.youtube.com/watch?v=5w2X_16tuK4 4. *Expect the Unexpected:* https://youtu.be/fOjrCRhCxY4 5. *Train drivers:* https://www.youtube.com/watch?v=KsAbOfeurng
DO	***Offline resource activities*** Try some of these fun activities to make sure you understand all the rules. These activities will help students read the messages important to rail crossing safety. Students are encouraged to explore at least two of these. *You will likely want to have batches of each of these printed beforehand for student use: 1. Sign Matching: https://www.queenslandrail.com.au/Community/RailSafety/Documents/RailSmart_signmatching_Colour.pdf 2. Train foldout: https://www.queenslandrail.com.au/Community/RailSafety/Documents/QRT%20Train%20foldout.pdf 3. Rail Smart Word Search: https://www.queenslandrail.com.au/Community/RailSafety/Documents/RailSmart_wordsearch_Colour.pdf 4. Crossword puzzle: https://www.queenslandrail.com.au/Community/RailSafety/Documents/RailSmart_crossword_colour.pdf
PLAY	***Online games/quizzes to play*** Students play these games to test how much you know about rail crossing safety Students are encouraged to explore at least one of these. 1. *Tracksville Trivia*: https://railsafetyweek.com.au/ 2. *Be track Smart*: https://betracksmart.org/take-our-rail-safety-quiz/
POSTERS	***The following posters are displayed in the Minecraft school library.*** 1. *Rail Safety Week:* https://tracksafefoundation.com.au/event/rail-safety-week/

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	2. *Respect the Sign* (kids): https://mc-71bd5e2a-aade-4067-a0ad-8402-cdn-endpoint.azureedge.net/-/media/project/aurizon/files/sustainability/rail-safety/level-crossing-community-packs/level-crossing-safety-poster_community.pdf?rev=b7500c17f75e49509820318e4aff2d31&hash=242AC7C6AA2194411E206A66B50F9E1F

After spending 10 minutes exploring the resources, students will learn how to program Robot Elliot with basic navigation code. The librarian will show them a video demonstrating how to code Robot Elliot's movements.

The example crossing mat in the library is used to explore how to use and run Robot Elliot's code (see coding instructions in Minecraft Technical Support). When ready Robot Elliot will suggest to the student that they move to a real crossing to assess their skills.

The students, using the compass and followed by Robot Elliot, move to a crossing in the town. Here the students will code Robot Elliot to cross and get the code checked by the volunteer. When the volunteer has approved it, they will watch Robot Elliot cross, then cross safely themselves and will be given their second badge by the volunteer on the other side of the crossing.

The correct code for the second crossing is below:

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Lesson Three

Pre-Minecraft activity

Discuss what students have learnt to date. Use the code cards and pictures of crossings (local or those at the end of this document). Show the students a picture of a crossing. With the students working in groups have them use the cards to create a code that would see Robot Elliot cross that crossing safely. Do this for a few different crossings discussing the differences and most important things to notice.

In Minecraft

Students are told by the friend's mother to travel to a nearby crossing to complete their third crossing mission. Students observe and cross and then return to their friend's mother to code Robot Elliot to cross safely. The mother will check the code then Robot Elliot can be sent alone to make the crossing with the students observing via a 'video feed.'

Once Robot Elliot has crossed safely, students will cross themselves and meet Robot Elliot at the playground. Robot Elliot will request that together they should return to the Station Master to collect their final reward and say goodbye to Robot Elliot.

The correct code for the third crossing is below:
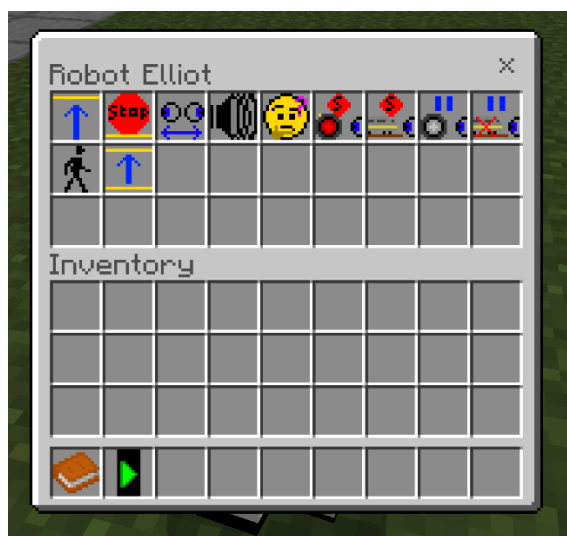
Wrap up Post Minecraft World Activity

Students can take a screen shot of themselves with their three badges. They could do this with the Minecraft camera and put the image in a Minecraft book to caption it. These books can be exported to PDF files that can then be printed.

Images can be printed out and put on the wall to celebrate each student's completion of the program.

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Additional Offline Student Activities

Crossing code

Use the Robot Elliot coding cards to play crossing games in the class or playground. Students can also build crossings in materials such as Lego and use the cards to program a figure's crossing.

Understanding differences in crossings

Visit local crossings to discuss the type of crossing and the safety features in place. If unable to leave the school, take photographs of local crossings to print out and display in the classroom for discussion. The aim is for students to recognise the differences in active, passive, pedestrian, and road crossings.

Students could use the 2D template attached in this document to make a 3D Robot Elliot to take about the local area and photograph using the crossings, at the railway station, for example.

Make your own poster.

Have students take a screen shot in Minecraft of themselves and Robot Elliot at a crossing and use it to create their own level crossing poster. Students take the screen shot and decide a simple fun message. Posters can be displayed in the classroom, school hallways or library.

Make a presentation.

Students can use images captured in Minecraft to make a PowerPoint presentation that could be shown at a school assembly to teach others why they need to think when crossing train tracks. The message here could be tailored to the types of crossings found in the local area.

Build your town.
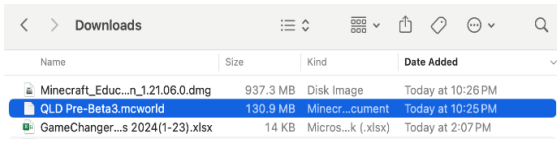
Students might create a map of the town to position any rail lines, stations, and key buildings. They could draw this, build it in Lego, or other construction material. Then use a new Minecraft world for groups of students to collaboratively build your town and position any local crossing/s. Students might include homes, the school, iconic buildings, a railway station for example. Depending on their Minecraft skill level they may also add Non-Player Characters (NPCs) to explain the features of the town. They could make this into an information tool, game, or quiz for younger students.

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Minecraft Technical Support

Download and login.

Get Set Up All play testers will need to be running the latest version of Minecraft Education on whatever device they choose to use. Check for the latest download of Minecraft Education, then download the game world to your device. Open Minecraft Education and Import the game world.

Download the Minecraft *Track Stars* game and distribute it to students (best option is to make it student accessible on a network drive). Students will need to open Minecraft Education, login and use either:

From Minecraft Education	From Game File
IMPORT button to bring the game world onto their devices.	Double click on the Minecraft file which will open it in Minecraft.
Students click impart and navigate to where the world is stored.	Students double click on the game file to open the world in Minecraft.

General controls for Minecraft

- **Keyboard and mouse (laptop or desktop)**
- **Touch Screen (tablet, iPad, or iPhone)**

Literacy assistance

	Throughout the world where there is text to read students will see the Microsoft Immersive Reader logo. Click on this logo and the student can read along with the voice or have the text read to them or even have it translated into other languages. *Make sure audio is on for the device and in Minecraft.

Building in the world

In Mission One, students will be invited to build a home for them and their robot companion. Building can only take place in the world's designated residential area. Students will have access to the full Minecraft inventory of creative resources to build in this area.

Keyboard (laptop or desktop)	Touch Screen (tablet, iPad, or iPhone)
Students open the inventory – clicking on the "E" key on the computer keyboard.	Use the triple dot button to access the inventory.

Students then drag items into their HOTBAR to be able to use them. The highlighted item is the one being used.
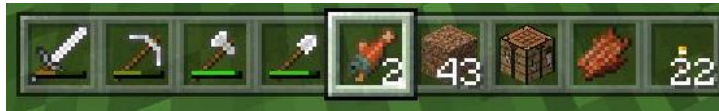
Remember it is **left click to break** and **right click to place**. If using a touch pad, it will depend on what has been set as the "right" and "left" click. To check or select options go to SETTINGS on the opening screen and then CONTROLS.
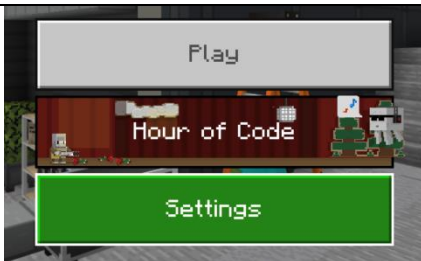
Using the Minecraft compass

	The compass will appear in the Minecraft HOTBAR and the orienting arrow point the way to go.

Managing Robot Elliot

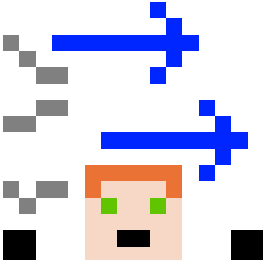|	Keyboard (laptop or desktop)	Touch Screen (tablet, iPad, or iPhone)
Getting Robot Elliot to sit	Right click on Robot Elliot (right click again to stand)	Tap on Robot Elliot (double tap to stand)
Adding memory	Right click on Robot Elliot with the memory card highlighted in the HOTBAR (in your hand)	Tap on Robot Elliot with the memory card highlighted in the HOTBAR (in your hand) and then tap the 'Insert Memory Upgrade' button.
Robot Elliot follows your crossing.	After the student crosses safely, they will click the start button in the HOTBAR to signal Robot Elliot to copy and cross.	

| | | Overview of coding icons and actions | Coding items are collected and put into order to code Robot Elliot's actions. |

Walk		Stop at Yellow Line		Think	
Jump		Look Both Ways		Stop if Train	
Run		Look Left		Wait Until Train Gone	
Dance		Look Right		Stop if Lights	
Approach Crossing		Listen		Wait until Lights/Bells Stop	
Wait 1 Second		Wait 2 Seconds		Wait 5 Seconds	
Wait 10 Seconds		Cross the Crossing			

Coding
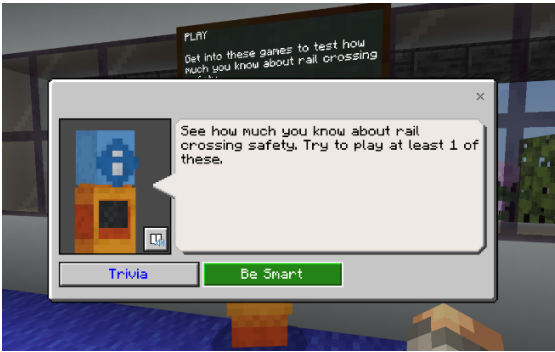
Students will be given a coding book. When opened (right click while highlighted in HOTBAR) it shows the coding options. Students turn on the options they think they want to use.

Choose Code Blocks

- Walk
- Jump
- Run
- Dance
- Approach Crossing
- Stop at Yellow Line
- Look Both Ways
- Look Left
- Look Right

Students then drag the items in their inventory into the order they want Robot Elliot to use them. Then press the START icon in the HOTBAR.

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Link to coding instruction video	Coding Robot Elliot - Queensland Rail Track Stars
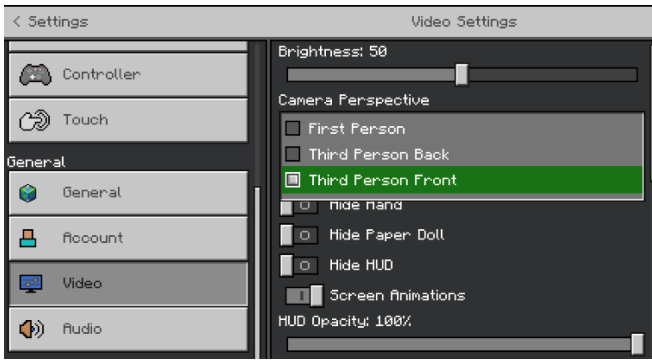
Using In World Library Resources

Keyboard (laptop or desktop)	Touch screen (tablet, iPad, or iPhone)
Right mouse click on one of the four computers then click on the button for the resource you want to explore.	Touch on one of the four computers then touch on the button for the resource you want to explore.
Linking to resources in the Safety Springs School Library	

Collecting Rewards and Taking Selfies

Students will be given a badge for completing each of the three missions. To see the badges on their Minecraft skins (characters). The default view in Minecraft is first person view (as looking through

character's eyes). To see the front of a character students will need to change the view to third person view.
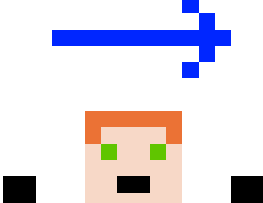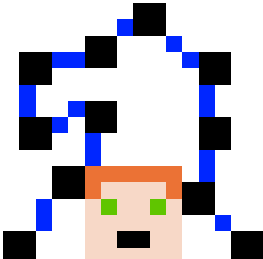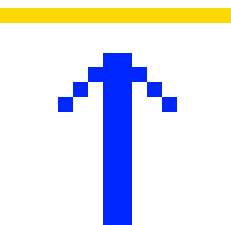
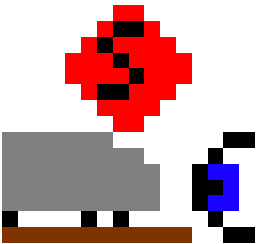| Keyboard (laptop or desktop)	Touch screen (tablet, iPad, or iPhone)
Different perspectives can be toggled by pressing **F5 (or fn + F5 on other keyboards)**. Pressing it once displays the back of the player, and pressing it again displays the front. Pressing it once more reverts to first-person view. Player in **third-person front view** showing badges for completion of missions 1 and 2.	 1. **Pause the game:** Tap the pause button to access the game menu. 2. **Go to Settings**: Tap on the "Settings" option. 3. **Select Video**: In the settings menu, tap on "Video." 4. **Change Camera Perspective**: Tap on "Camera Perspective" to switch between first-person, third-person back, and third-person front views[1]. This should help you switch views easily while playing on a touch screen.

Completing the game
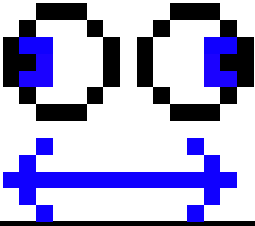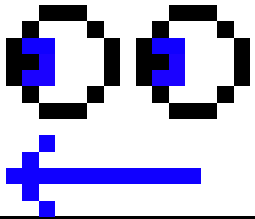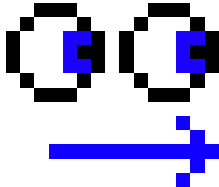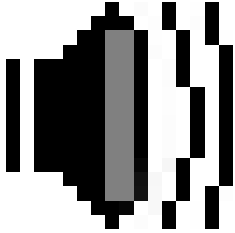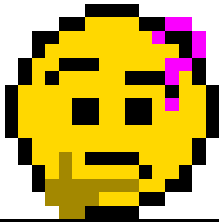
The game is over when the student returns to Station Master Mervyn Squares and receives their third badge. They are told that Robot Elliot will move on to the next town to help kids there and a train whistle sound ends the game! Students will receive a link to a *Track Stars!* Certificate. A password will be required for download which is: **trackstars**. The details to download the certificate manually are below.
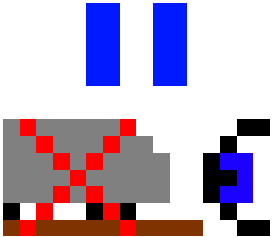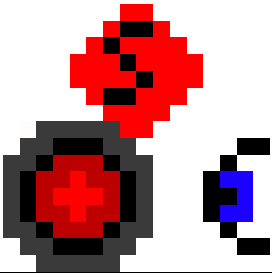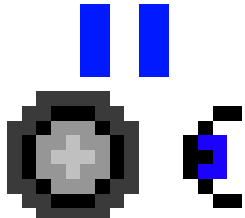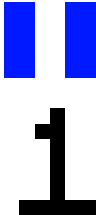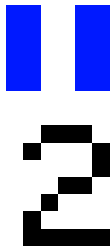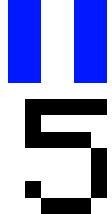
Link	Password
Track Stars! QR Certificate	trackstars

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Coding Cards

	Walk
	Jump
	Run
	Dance
	Approach crossing
	Stop at yellow line

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	Look both ways
	Look left
	Look right
	Listen
	Think
	Stop if train

	Wait until train gone
	Stop if lights on
	Wait until lights/bells stop
	Wait one second
	Wait two seconds
	Wait five seconds
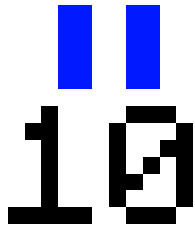
10	Wait ten seconds
↑	Cross crossing

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