Oti-Bot Cross-Curricular Lessons

This set of individual lessons have been created in collaboration with Jodie Lopez, an education technology expert and former primary school teacher. Jodie has won several awards for her use of technology across the curriculum. Designed for children aged 4-11 years, the lessons introduce all Oti-Bot's functionality while supporting the development of children's programming skills. Each lesson can be delivered as a standalone session or combined with others to provide a comprehensive progression, enabling learners to explore the full range of Oti-Bot's features and the coding possibilities offered by the app.

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Oti-Bot the Storyteller

**Each of these lessons works as a standalone session or can be used with other lessons for a longer progression to learn all of Oti-Bot's functionality and the coding possibilities of the*

Skills and Learning	Resources
Children will learn to use Oti-Bot's Moods functionality in storytelling, with extension possibilities for creating complex programmes for those who are ready. You can adapt this lesson using the suggestions within the plan for younger children, or older children, and to make it accessible for all or give a challenge for those who are ready for it.	Oti-bot + tablet with Oti-Bot app Optional: Enhancements for storytelling such as setting props and backgrounds.

Key Vocabulary and Questions	E-safety discussion points	Assessment Opportunities
Emotions/Moods and what they mean with some examples How do our emotions affect our actions sometimes? Oti-Bot is showing different moods through the colour and shape of the eyes, can you look at a human face and know what emotion they may be feeling? How can you tell? Could you show someone your sad/happy face? What is different between the faces? Do people sometimes pretend by smiling when they are sad?	How can we help someone who is struggling with their emotions? When we are using the voice record option how do we assure private information is not shared publicly? (Using pseudonyms instead of real names if making up stories or talking about ourselves; telling nearby groups when we are recording so we do not accidentally record them talking privately)	Non-programming goals: To direct Oti-Bot using the Control section of the app. To use the buttons to change Oti-Bot's Moods. Programming goals: To use the Programme section of the Oti-Bot app to create a programme which includes movement and controlling the Moods of Oti-Bot. Extension options to add sound recording.

Introduce	Introduce children to the Oti-Bot app and Oti-Bot by using the Control panel to manually change Oti's emotions in the Moods section. You can also show changing the belly colours in the same area. Ask children to name the different feelings Oti is experiencing for each Mood change. Can they guess what you have changed it to? Are there different words for the same or similar emotions? Let different children come to have a go for themselves and talk through the process of what they are doing on the app. As an extension of this task, you could ask children to match the emotions written on paper with the different Moods on Oti-Bot.

Learn and Explore	
	Set children a challenge to work through Oti-Bot's Moods and think about things that make them feel the same way or use characters from stories/films as examples if you do not want children to publicly discuss the more 'negative' emotions such as sadness or anger. If they have seen the film 'Inside Out' they may be able to use these characters as examples for some of the Moods. Ask children to create a story scenario in small groups or pairs. They could storyboard this on paper also if you have the time. Think about what is going to happen to Oti-Bot in their story and then plan out the Moods needed to reflect what is happening to Oti. **Non-programming option:** Children can use the manual controls on the Control panel to change Moods on Oti-Bot at the relevant part of the story. **Programming option**: Use the Programme section of the app to build the story together into a programme which runs through the story and different Moods as chosen in the right order.

Make it accessible	Add a challenge
Children could use the QR codes to show Oti-Bot the chosen emotion rather than using the app to change the Moods. They can plan out the order of these for their story and simply show the QR code when they get to the relevant parts.	Children could programme Oti-Bot to also move across the floor as part of the story to different areas or 'settings' where things will happen. As part of this they could add coloured pieces of paper to the floor and set Colour Copy mode to ON so that Oti changes belly colour in the right areas too, to align with the storytelling.

Review and Reflect	
	Ask groups to talk through their story while Oti-Bot is changing Moods either manually or via their programme. Ask children how they could make a totally "hands-free" storytelling experience using Oti-Bot and where this could be useful. An immersive theatre experience perhaps? <u>Extension</u> Children can record sections of the story and build this into their programme so that Oti-Bot tells their own story on the move!

Oti-Bot the Photographer

Each of these lessons works as a standalone session or can be used with other lessons for a longer progression to learn all of Oti-Bot's functionality and the coding possibilities of the app

Skills and Learning	Resources
Children will learn to use Oti-Bot's photo-taking, video-taking, and live video feed functionality and plan their photos for a storyboarding activity which you can link to any current learning or topics which fit with a cross-curricular lesson. You can adapt this lesson using the suggestions within the plan for younger children, or older children, and to make it accessible for all or give a challenge for those who are ready for it.	Oti-bot + tablet with Oti-Bot app Examples of print and video adverts – posters and leaflets and some videos from TV adverts Optional: Theme- or topic-based props to take photos of if you wish to incorporate these into the photos and videos.

Key Vocabulary and Questions	E-Safety Discussion Points	Assessment Opportunities
Photographer = someone who takes photos of events (usually professionally) Videographer = someone who takes videos of events or acting (usually professionally) What kind of events might someone hire a photographer or videographer for? (Weddings/birthday parties/films for TV or social media) Are there currently any types of robots used in photography/videography? (drones)	Should we take photos of people without their knowledge and/or consent? How can we check that people are happy to have their photos taken? How do we keep their photos safe and check for consent before placing them online? Who can we report it to if our photo was uploaded to social media without our consent?	Non-programming goals: To direct Oti-Bot using the Control section of the app. Use the live video feed, Take a Photo, and Take a Video functionality. Programming goals: To use the Programme section of the Oti-Bot app to create a programme which includes taking photos and videos as well as using the live video feed.

Introduce	Introduce children to the Oti-Bot app and Oti-Bot by talking through what to click to get to the Control panel of the app. If you are able to mirror your tablet to your classroom screen or interactive whiteboard show them what happens if you use the live video feed to see the class through Oti-Bot's eyes. They will likely react and do some fun things on screen. This is a good opportunity to talk through some extra e-safety points if some pull faces etc i.e. imagine if that was live TV and everyone was watching. What would be appropriate or not?

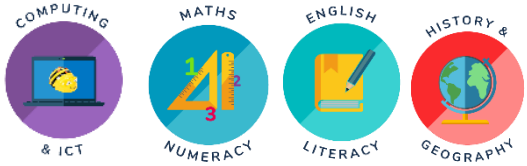
	What situations in life do people get photographed by someone who gets paid to do it? (Weddings, parties, filming for TV and films or social media). Think about adverts they see on TV and those they see on posters and elsewhere in print. What makes the photos/videos good or interesting to catch the eye? Would they have better ideas for the ones they have? Or new ways they would make an advert for the same company?

Learn and Explore	Set children a challenge of planning their own adverts which are persuasive and effective (or infomercials if want to tie it to their current learning). Give them ideas for what they could be advertising. This could be an open creative task or something more fixed around their learning with specific choices to pick from. Ask children to plan and then to set up their photos and videos carefully and then use Oti-Bot to take the photos and videos. They can use the live video feed option to practice and line up pictures to see how things look through Oti's point of view. Talk about the importance of careful planning – real photographers cannot afford to miss the shot or take too long for the budget! **Non-programming option:** Children can use the manual controls on the Control panel to change move Oti-Bot into position to take the picture/video then use the controls there to Take a Photo or Video. **Programming option**: Use the Programme section of the app to create a video as Oti-Bot moves around so that their advert is more of a TV advert than a quick print or social media one. Think about the story and potentially record some voice recording on Oti-Bot to add to the video.

Make it accessible	Add a challenge
Children can plan very simple images and keep retaking via the Control section of the app. Children could move Oti-Bot into position by hand if they struggle with the manual movement controls on the app.	Children can download their images and photos and use editing software to create their final advert, adding music and sound effects as appropriate.

Review and Reflect	Ask groups to share their final photos/adverts and talk about the decision-making process they went through to achieve their goals. How would Oti-Bot help in some real-life situations (perhaps Oti-Bot could provide a "dog's eye view" of a wedding for a happy couple who could not bring their dog to the actual wedding day?) Extension- Children can think of more scenarios for using Oti-Bot as their photographer and design programmes for this in the Programme section of the app. Perhaps Oti could follow athletes on your school sports day?

Oti-Bot the Maze Escaper!



Each of these lessons works as a standalone session or can be used with other lessons for a longer progression to learn all of Oti-Bot's functionality and the coding possibilities of the app

Skills and Learning	Resources
Children will learn to use Oti-Bot's live video feed and sensors to navigate a maze through exploration and then programming code to make a journey. You can adapt this lesson using the suggestions within the plan for younger children, or older children, and to make it accessible for all or give a challenge for those who are ready for it.	Oti-bot + tablet with Oti-Bot app Props and items to use as obstacles within the maze Boxes or cardboard to make a maze structure

Key Vocabulary and Questions	E-Safety Discussion Points	Assessment Opportunities
Maze Directions (relevant to any links you wish to make with stage-relevant mathematical vocabulary)	If we were really lost and couldn't find an adult what would we do?	Non-programming goals: To direct Oti-Bot using the Control section of the app and the live video feed to find Oti's way out of the maze or to a goal within the maze. Programming goals: To use the Programme section of the Oti-Bot app to create a programme which includes using Oti-Bot's colour sensors to help navigate the maze.

Introduce	Introduce children to the Oti-Bot app and Oti-Bot giving them the chance to firstly experiment with the Control section of the app to move Oti-Bot around the floor. Show them also that you can turn on Oti-Bot's live video feed to see the world from the Oti point of view. Does this make controlling movements easier/harder? Show them also how to use the Programme area to create a programme of code which Oti-Bot can follow to move along a predefined journey. Start with simple instructions such as turning 90 degrees left/right, moving forward 10cm or backwards 5cm.

Learn and Explore	Pre-create a maze for each group or one main maze which children can all work from the outside of. Within the maze should be some obstacles to avoid as well as clear paths for Oti to either make their way out of the maze or into a specific part of the maze (which you could use to be a race if you wanted). For using the colour sensor part you will also need some coloured sections of floor so that these can be used in the programme navigation. Tell children they will need to work out a way to get Oti out of/through the maze to the chosen destination whilst avoiding all objects. You could link this to current topics if you wish (finding their way through the tombs under the Egyptian pyramids?) or link to the mathematical vocabulary around directional and navigational language. **Non-programming option:** Children can use the manual controls on the Control panel with the live video feed to direct Oti-Bot around the maze while avoiding obstacles as seen from Oti's point of view within the maze. For extra challenge you make it so that children cannot see the maze from above so that they have to rely solely on the view through the live video feed. **Programming option**: Use the Programme section of the app to create a programme to get Oti out of the maze/through the maze based on using a plan of the maze. For challenge you could leave them to create the maze map themselves and do all the calculations they need to make sure Oti moves by the correct measurements i.e. how many centimetres does Oti need to go forwards? Add in the sensors as part of the programme so that Oti navigates sometimes based on colour sensors and see how this affects the movement within the maze.

Make it accessible	Add a challenge
The maze can be as easy as is needed to give children a chance to succeed in their mission with Oti-Bot. You can also help them with the controls by asking them to hold up cards of what Oti needs to do (turn left/move forward) while you manage the controls.	Make the maze not viewable from above so that children need to navigate the maze through Oti-Bot's eyes in order to plan their programmes.

Review and Reflect	Ask groups to share their challenges for getting Oti through the maze. How could we add/take away some of those challenges? How might this be used in the real-world application of robots? (You may wish to show videos of delivery robots in cities such as Cambridge, England and how their use sensors to help them to crossroads etc) <u>Extension</u> Challenge children to create their own mazes and programme Oti-Bot to make a way through the maze without every touching any of the sides.

Oti-Bot the Footballer

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Skills and Learning	Resources
Children will learn to use Oti-Bot's directional functions to "kick" a football towards a goal. You can adapt this lesson using the suggestions within the plan for younger children, or older children, and to make it accessible for all or give a challenge for those who are ready for it.	Oti-bot + tablet with Oti-Bot app A small ball which could be used as a football for Oti to kick A "goal" of some sort to aim towards (this could be simply a line drawn) Optional: a coloured square of paper.

Key Vocabulary and Questions	E-Safety Discussion Points	Assessment Opportunities
Directional vocabulary (appropriate to the age and mathematical stage of the children)	Can robots replace humans? What can they do/not do for humans and how would football be changed if it became all robots? Would you still want to watch? How would it affect the economy?	Non-programming goals: To direct Oti-Bot using the Control section of the app and the live video feed to 'kick' a football towards the goal. Programming goals: To use the Programme section of the Oti-Bot app to create a programme which ensures Oti-Bot always succeeds on penalty shoot-outs!

Introduce	Introduce children to the Oti-Bot app and Oti-Bot giving them the chance to firstly experiment with the Control section of the app to move Oti-Bot around the floor. Show them also that you can turn on Oti-Bot's live video feed to see the world from the Oti point of view. Does this make controlling movements easier/harder? Show them also how to use the Programme area to create a programme of code which Oti-Bot can follow to move along a predefined journey. Start with simple instructions such as turning 90 degrees left/right, moving forward 10cm or backwards 5cm.

Learn and Explore	Explain to children that their aim is to score a goal with Oti. Show them the mini football and the goal line they will use to aim at. Ask children firstly what the limitations of the aim will be (Oti has no real legs with which to kick so how can Oti get the football over the goal line instead?) Ask children to measure out and plan the distance from the ball to the goal line and use this information to direct Oti-Bot to 'kick' the ball. Show also how to use the head tilting to make a more realistic show of Oti looking at the ball. You can also use the live video feed to watch everything through Oti the Footballer's eyes! **Non-programming option:** Children can use the manual controls on the Control panel with the live video feed to direct Oti-Bot to the ball and then to get the ball over the goal line. Can they do this multiple times to get as smooth a path as possible? Do they need to turn Oti in order to keep control of the ball? **Programming option**: Use the Programme section of the app to create a programme to get Oti to 'kick' a perfect goal every time. Imagine an important game has gone to a penalty shoot-out and they must make sure Oti scores every time. How do they make a programme which repeats the right actions for success each time? Could they also add in Colour Copy mode and have Oti roll onto a piece of coloured paper so that we see Oti's belly light up a certain colour to show they are ready to 'kick'?

Make it accessible	Add a challenge
Use card replicas of directional instructions (left, right, forward and backwards) to plan the moves for Oti-Bot and work in groups so that some children can control the app while others plan the movements.	Make a programme which is totally hands-off i.e. Oti-Bot moves to the line, 'kicks' the ball then returns to the line for the next penalty.

Review and Reflect	Let each group/children show their Oti-Bot 'kicking' the football towards the goal. Perhaps extend this to having a football match between different groups with children keeping track of the goals scored on each side. Extension Can you make Oti look like a real footballer? Can you add to your programme changes of Moods and head tilts which will mimic those of a real footballer at play?

Oti-Bot the Adventurer

Each of these lessons works as a standalone session or can be used with other lessons for a longer progression to learn all of Oti-Bot's functionality and the coding possibilities of the app

Skills and Learning	Resources
Children will learn to use Oti-Bot's directional functions to travel the "world" and then add in Colour Copying to indicate 'landing' in different countries. You can adapt this lesson using the suggestions within the plan for younger children, or older children, and to make it accessible for all or give a challenge for those who are ready for it.	Oti-bot + tablet with Oti-Bot app A large world map with coloured squares added to be used as a mat for Oti-Bot to travel on. Optional: atlases for children to explore the countries that Oti-Bot is in.

Key Vocabulary and Questions	E-Safety Discussion Points	Assessment Opportunities
Directional vocabulary (appropriate to the age and mathematical stage of the children) Geography-specific terms as appropriate to the age and stage How do robots already help us with travel and travelling? (Scanners at airports, passport gates, autopilot on aeroplanes)	How do robots keep us safe with our data at airports, and how do we look after ourselves (keeping our personal passport information private and safe etc)?	Non-programming goals: To direct Oti-Bot using the Control section of the app and using the Colour Copy Mode from the Control section. Programming goals: To use the Programme section of the Oti-Bot app to create a programme which enables Oti-Bot to travel the world and play information about different destinations.

Introduce	Introduce children to the Oti-Bot app and Oti-Bot giving them the chance to firstly experiment with the Control section of the app to move Oti-Bot around the floor. Place coloured paper on the floor and show children how to turn on the Colour Copy mode on the control panel and then direct Oti-Bot over the paper to see how the belly changes colour when landing on each piece of paper. Lay out the map of the world on the floor for Oti-Bot to travel on. Ask the children to pick different colours to represent different colours on each continent and place pieces of paper accordingly in each place. These could be places you are already studying, or you can build this lesson into some geography learning by asking children to do some research on 4 or 5 different places so that they

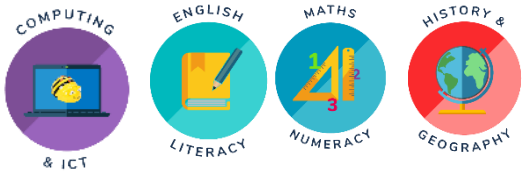
	know a fact or 2 about each place. These could be simple (this place has a hot desert) or more complex (this place has a high population density) according to the children's ages.

Learn and Explore	Explain to children that Oti-Bot wants to travel the world and learn about different places. Ask children to write 1 or two facts onto pieces of card which correspond with the colours they chose for each of their destinations around the world. **Non-programming option:** Children can use the manual controls on the Control panel, with Colour Copy mode switched on, to direct Oti-Bot around their world map and then read out their cards of information when Oti lands on the relevant colour in their chosen country and the belly colour changes accordingly. They can continue to research and add different countries with new colours to continue their journeys. **Programming option**: Use the Programme section of the app to create a programme to get Oti to travel from country to country. Build in the Colour Copy Mode switch ON as part of the code so that Oti is changing colour with each country change. Add sound recording so that Oti records information read out from the cards. This would record after the belly colour changes so that children have a visual prompt to start reading the card. Then build a programme to Play the recordings when landing on each country so that Oti-Bot can become an expert in the chosen countries!

Make it accessible	Add a challenge
You can reduce the number of countries that children learn about to make this more manageable. And you could provide the cards of information rather than asking children to write these themselves.	Create a full journey with multiple recordings so that Oti-Bot can do their own travel journey as if on a TV show about going to different countries.

Review and Reflect	Ask children how this use of Oti-Bot could work in real life – will they replace tour guides? Or would they create useful learning tools so that children can send Oti-Bot to places they cannot visit and watch the films and listen to recordings Oti takes on journeys. Could Oti even come with you on your next school trip to make a souvenir video? <u>Extension</u> Create a programme which has recordings within each country and narration on the travel between countries – children can research how they would need to travel from one country to another. Would it always be by aeroplane or sometimes a boat or train?

Oti-Bot the Collector



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Skills and Learning	Resources
Children will use Oti's 'bucket' belly or 'forklift' belly to send him on a shopping trip to collect things from different areas around the classroom. You can adapt this lesson using the suggestions within the plan for younger children, or older children, and to make it accessible for all or give a challenge for those who are ready for it.	Oti-bot + tablet with Oti-Bot app Items that will fit in Oti-Bot's 'bucket' belly or which can be lifted by the 'forklift' belly. Optional: a floor mat of a town or farm or similar 'real-world' setting (such as the TTS Bee-Bot mats)

Key Vocabulary and Questions	E-Safety Discussion Points	Assessment Opportunities
You may add specific vocabulary with the items collected to fit in with a particular theme you are learning about or to expand vocabulary as part of literacy lessons.	When children are adding items to the forklift or bucket belly talk about how to keep safe i.e. those directing Oti-Bot must make it clear when they will stop moving Oti so that other children can place the items without having their fingers run over! Develop a key word for this as a way of teaching children about safety if they were working in a factory or similar environment.	Non-programming goals: To direct Oti-Bot using the Control section of the app and coordinating drop offs and pickups to various places. Programming goals: To use the Programme section of the Oti-Bot app to create a programme to reach each of the different places on Oti's journey to collect and drop off items.

Introduce	Introduce children to the Oti-Bot app and Oti-Bot give them the chance to firstly experiment with the Control section of the app to move Oti-Bot around the floor. Show them the belly options which click in and out (carefully!) of Oti's belly section to give either a forklift or bucket option to collect items. Talk about how that could be useful. Could Oti bring things to children in the classroom? In a circle on the floor ask children to lend each other items by sending Oti from one person to another to collect something such as pencil or pencil sharpener. One child controls Oti to the right

	place (taking instructions from others as needed) and when Oti has reached the second child, they add something to the bucket/forklift to be brought back to child 1.

Learn and Explore	Explain to children that robots can be used for delivering and collecting items and navigating towns (you could use the examples of Amazon drone delivery or the delivery robots in Cambridge, England which use a range of safety features to keep everyone safe and ensures packages get to the right people.) Show children the map floor mat if you are using one, or simply have key areas set up with items for Oti-Bot to get to and collect. Give children a route you want them to take i.e. "Oti must start at the house and take a letter to the post office to drop it off, then move on to the supermarket to get some shopping and take it to someone else's house." **Non-programming option:** Children can use the manual controls on the Control panel, to direct Oti to each point. Another child will have to add/remove the item from the forklift or bucket belly. **Programming option**: Use the Programme section of the app to create a programme to get Oti through the task list with pick-ups and drop-offs at various places. Someone will need to manually add/remove the items, but you could programme in Oti changing Mood to indicate that Oti is ready for drop off/pick up as an indicator to the children handling the items.

Make it accessible	Add a challenge
Children can work in teams and can follow one-step instructions at a time if needed rather than a longer task list.	Add extra elements such as Oti-Bot saying phrases at different places (record through the recording options and then play during the programme) such as "Good morning please can I buy some bread?" to make a complete role play of a robot being a delivery driver. **You could also add facial recognition in here so that Oti-Bot seeks out a particular child to give the items to.**

Review and Reflect	Ask children if they would order from somewhere that uses robots to deliver items. What are the pros and cons? Why are people looking at using robots more? What other jobs could we use robots for? <u>Extension</u> Create a programme based on another job that Oti-Bot can do for you to make life easier. This could be a job for in school or something in your home.

Oti-Bot and the Escape Room

Each of these lessons works as a standalone session or can be used with other lessons for a longer progression to learn all of Oti-Bot's functionality and the coding possibilities of the app

Skills and Learning	Resources
Children will use their Oti-Bot skills to solve escape room challenges and reach goals set by their teacher! Children will use problem solving and clues to help them out. You can adapt this lesson using the suggestions within the plan for younger children, or older children, and to make it accessible for all or give a challenge for those who are ready for it.	Oti-bot + tablet with Oti-Bot app Escape Room challenges which children can follow and use Oti-Bot features to show when they have solved clues. These could include challenges linked to current literacy or maths learning.

Key Vocabulary and Questions	E-Safety Discussion Points	Assessment Opportunities
How can we solve problems and use clues to help us? How can we be observant with the world around us?	Discuss how clues can help us to make sense of our surroundings and also look for any potential dangers or things that can help us.	Non-programming goals: Use the live video feed and controls to find clues and solve puzzles to 'escape' at the end of the challenge. Programming goals: To use the Programme section of the Oti-Bot app to set up their own escape room challenges for their classmates.

Introduce	Introduce children to the Oti-Bot app and Oti-Bot and the controls for moving Oti-Bot and using the live video feed to look through the point of view of the robot. Explain you will be asking Oti-Bot to go into a room and solve some challenges as an escape room challenge. Before they go in you could do a sample problem solving task so they know the kinds of things they will find.

Learn and Explore	You will need to set up and create some challenges suitable for the children you are working with. You will set these up in a room or area where children can move Oti-Bot around to look at the props and clues in the room to help them to solve the challenges. If a separate room is not possible, try to create an area without too many 'red herrings' which could confuse the game. Examples of activities (which can be made harder/easier depending on the stage of children you are working with) could include: 1) A 'code' to decipher such as A=1, B=2, C=3 and so on, so that the children can use Oti-Bot's live video feed to find the letters/numbers around the room to spell out a certain word or give them the answers to maths problems which they can then use for other sections of the challenge. 2) Props around the room which link to a book you have been reading as a class and might help them to solve clues you give them. 3) Set tasks for the children to complete using Oti-Bot i.e. some clues which lead to them realising they must change Oti's belly colour to red in order to escape the room You will need to oversee and let them know if they have completed tasks to 'escape' the room. You can create as many or as few challenges as you like depending on the time you have available. Children could work independently or in pairs or groups. The possibilities are endless! Just think of things which would be viewed well through Oti's live video feed, so they have to use this to look around their environment. **Non-programming option:** Children can use the Control section of the app to move Oti-Bot around the room and then follow the instructions for i.e. 'Make Oti sad' using the functions of the Control section only. **Programming option**: Use the Programme section of the app follow the instructions in the escape room i.e. "You must make Oti-Bot draw a triangle and then a square in order to escape."

Make it accessible	Add a challenge
Use simple challenges which rely on using only the Control section of the app.	Use multiple clues around the room to ensure children build up a complex set of instructions for Oti-Bot in the Programme section of the app. They can only escape when their code functions correctly for all sections!

Review and Reflect	What was easy/hard about solving the problems? How did looking at clues help you? When else in life might we need to look around for clues to help us know what to do? <u>Extension</u> Create your own escape room challenges for your classmates and see if they can complete them!

Oti-Bot the Tour Guide

Each of these lessons works as a standalone session or can be used with other lessons for a longer progression to learn all of Oti-Bot's functionality and the coding possibilities of the app

Skills and Learning	Resources
Children will use their Oti-Bot as a tour guide to create school tours for visitors. These can be recorded to be used online or Oti-Bot can ask prospective parents and students to follow them around the school! You can adapt this lesson using the suggestions within the plan for younger children, or older children, and to make it accessible for all or give a challenge for those who are ready for it.	Oti-bot + tablet with Oti-Bot app School layout maps (or just the classroom for a simple version)

Key Vocabulary and Questions	E-Safety Discussion Points	Assessment Opportunities
How can Oti-Bot help to create a school tour that can be used for prospective students? What would they want to know about our school?	Discuss what we need to be sure of it we are making a video tour to go online i.e. if people know this is our school should we also show our faces on the video/use our real names?	Non-programming goals: Use Oti-Bot to tour the school while recording videos at key points. You can be talking about what Oti-Bot is looking out while videoing. Programming goals: To use the Programme section of the Oti-Bot app create a tour which people can follow behind as Oti-Bot leads the prospective students.

Introduce	Introduce children to the Oti-Bot app and Oti-Bot and the controls for moving Oti-Bot and using the live video feed to look through the point of view of the robot. Explain you will use Oti-Bot as a school tour guide. Plan out a route to take which will show off key parts of the school you want to show prospective students. Explain that the unique viewpoint of Oti will make the school seem more realistic to younger students looking up!

Learn and Explore	Let children work in teams to plan out their route around the school and decide what Oti-Bot needs to record for each section. Ask them to plan out their script alongside the route map. You could choose here to record purely from Oti's point of view at each stop, or augment by having two Oti-Bots travel together so that one captures the movement of the other. Then you can alter and edit together the videos from the Oti-Bot who is recording the videos at each stop point, and the feed of the Oti-Bot recording the first Oti-Bot moving around the school. So, children will be moving to a point, then recording on Oti-Bot a little video about that area of the school. You can then download these videos and edit them as you wish with extra effects or music. **Non-programming option:** Children can use the Control section of the app to move Oti-Bot around the room and then use the Control section to take a video or photo to then edit into your video. **Programming option**: Use the Programme section of the app to make a full school tour for prospective students to follow Oti-Bot around the school. For this, pupils will need to plan the route and record sound onto Oti-Bot to be read out at key points. Then programme Oti to move to a certain place then play the recording for that place. i.e. Oti moves to the art room and a recording tells prospective students about what they can expect from lessons in art.

Make it accessible	Add a challenge
Work in teams with teacher help where needed to both script the videos/sound recordings and to plan the movements of Oti-Bot.	Create a detailed video incorporating the recordings from your Oti-Bot(s) as appropriate so that the video can be added to the school website as part of your virtual open days section.

Review and Reflect	Would you have liked to be toured around the school by Oti-Bot? How else could we use Oti in this way? Perhaps as a buddy for new students alongside helpers? <u>Extension</u> Create your full school tour and treat your headteacher to a full school tour planned by Oti-Bot and get their feedback!

Oti-Bot the Traffic Controller

*Each of these lessons works as a standalone session or can be used with other lessons for a longer progression to learn all of Oti-Bot's functionality and the coding possibilities of the app**

Skills and Learning	Resources
Children will use their Oti-Bot as a traffic controller and work with multiple Oti-Bots to create a functioning traffic junction! You can adapt this lesson using the suggestions within the plan for younger children, or older children, and to make it accessible for all or give a challenge for those who are ready for it.	Oti-bot + tablet with Oti-Bot app Toys cars/trains and tracks with a four-way junction (or paper with a junction drawn on it.)

Key Vocabulary and Questions	E-Safety Discussion Points	Assessment Opportunities
How are traffic lights used and how do they help us?	Discuss how we behave as pedestrians at traffic lights especially at junctions. How are they programmed and how do they keep us safe?	Non-programming goals: Use Oti-Bot as a traffic light using the Control section and watching the live video feed to see where cars are moving around. Programming goals: To use the Programme section of the Oti-Bot app and expand the current Traffic Lights programme in the Play section to include multiple Oti-Bots working in conjunction with each other to make a functioning 4-way traffic junction.

Introduce	Introduce children to the Oti-Bot app and Oti-Bot and the controls for moving Oti-Bot and using the live video feed to look through the point of view of the robot. Explain that Oti-Bot is going to control the traffic at a junction. How is that done in the real world with traffic lights? What sequence do they go in? What is the purpose? Is there just one traffic light at a junction? Where do they need to be?

Learn and Explore	Set up tracks and cars so that there is a junction with 4 roads/tracks coming together. For the purpose of the traffic moving this will need to be manual so some children will be in charge of moving cars/trains on the route while others are controlling Oti-Bot. Children will need to think about planning their use of Oti-Bot(s) to run the traffic controlling of the junction. Think about giving each of the 4 roads a chance to go, and thinking about which way cars might turn. How would we need to avoid accidents? Which order will lights have to go in and which Oti-Bot would need to go first? **Non-programming option:** Children can use the Control section of the app and the live video feed. They can manually change the belly colour of Oti-Bot to Red/ Orange/Green as needed to control the traffic. Some children will be in charge of changing the colours and the other children must use these colours to make the cars go manually at the junctions (even if this means causing a crash as that is how they will learn it is not working!) **Programming option**: Use the Programme section of the app to programme multiple Oti-Bots to work in conjunction with each other to make the traffic lights change in the right order across the junction. Some children will be in charge of changing the colours and the other children must use these colours to make the cars go manually at the junctions (even if this means causing a crash as that is how they will learn it is not working!)

Make it accessible	Add a challenge
Work in teams with teacher help where needed to help with controlling Oti-Bot while children move cars or vice versa.	Add pedestrian crossings and extra Oti-Bots to create more challenge and ensure pedestrians can cross the roads too!

Review and Reflect	What happens if we get the code wrong on this one? What happens if just one of the Oti-Bots is doing the wrong thing? How would this work in real life? How do you think town planners are organising all this? <u>Extension</u> Create a full town using Oti-Bots to run everything from deliveries to traffic controlling!

Oti-Bot the Emotion Coach

*Each of these lessons works as a standalone session or can be used with other lessons for a longer progression to learn all of Oti-Bot's functionality and the coding possibilities of the app**

Skills and Learning	Resources
• Develop understanding of feelings and emotions. • Use technology to support cross-curricular learning. • Interact and engage with technology in different ways.	• Oti-Bot + tablet with Oti-Bot app • Oti-Bot QR codes • A book that explores emotions or characters' feelings • Mirrors (optional)

Key Vocabulary and Questions	E-Safety Discussion Points	Assessment Opportunities
How do you show emotions and how does Oti-Bot show them? Which emotions can programmed on Oti-Bot and how are they shown?	How can we safely share our feelings with a robot, and what should we remember about privacy and personal information when talking to technology? Discuss with the children that although Oti-Bot shows emotions, robots do not have feelings – people programme them to express emotions like humans do.	Can the children identify with the different emotions that Oti-Bot shows? Can they clearly express their own emotions and understand why they have different feelings? Can the children explain their colour choices for different emotions? Do their colour choices generally reflect widely recognised emotions (e.g. 'red' for anger. 'grey' for sad etc).

Introduce	• Introduce Oti-Bot if children haven't met Oti before. • Using the app and QR codes, look at the different emotions that Oti-Bot can show. • Discuss – Which emotions can be programmed and how does Oti-Bot show them? • Spend time talking about the different colours, noises and facial expressions that are used. • How do you show those emotions and what is the same or different with Oti? You could use mirrors so children can see how their own facial expressions compare to Oti's.

Learn and Explore	**Activity 1:** • Show children a picture that might create a specific feeling or emotion, such as being on a rollercoaster or being at the beach. Use the programmable emotions to show how Oti feels in this situation. Ask children – so how does Oti feel about this? Why do you think he feels this way? • Encourage children to talk about how they would feel. Would they feel the same as Oti or not? • Discuss and explore the idea that we all may feel differently about the same situation. **Activity 2:** • Share a book with children that explores different characters and their emotions. As you read the book, ask children to use Oti to show the different characters' emotions. They might use the QR codes or the Oti-Bot app.

Make it accessible	Add a challenge
Work in small groups with adult support where needed with using the app and QR codes.	Provide children with their own book or section of a book and ask them to program Oti to show the different emotions of the characters. The complexity of the text and emotions portrayed can be adapted according to ability.

Review and Reflect	• Re-cap the different emotions that Oti-Bot can show. Discuss the colours for the emotions and ask children to think about whether they would use the same colours for each emotion. If not, what would you use and why? • Finally, are there any emotions that are not shown? If so, ask children to choose the colour and design for their own Oti-Bot expression.

Oti-Bot the Shape Drawer

*Each of these lessons works as a standalone session or can be used with other lessons for a longer progression to learn all of Oti-Bot's functionality and the coding possibilities of the app**

Skills and Learning	Resources
• Develop understanding of the properties of shapes. • Learn to use the pen mechanism. • To design, write and debug programs. • To use sequences and repetition in progress. • To use logical reasoning and critical thinking skills.	• Oti-Bot + tablet with Oti-Bot app • Pens (for pen holder)

Key Vocabulary and Questions	E-Safety Discussion Points	Assessment Opportunities
How can we use Oti-Bot's line drawing to help us in our learning? Can you programme Oti to draw shapes with different properties?	Remind children that robots are programmed devices, not real people, and may record and transmit data. They should never provide personal details to the robot or enter them into any connected device.	How many different types of shapes were the children able to draw? Were they able to create the correct algorithms to draw shapes with different properties? If they encountered any problems, were they able to debug effectively? What steps did they take?

Introduce	• Introduce Oti-Bot's pen mechanism and show children how this can be programmed using the block-based environment on the Oti-Bot app. Look at the pen up and pen down functions. • Ask children to consider different ways that we might use Oti's line drawing to help us in our learning. • Explain that today we are going to use this to help with our learning about shapes. Use one of the preloaded programs to demonstrate how Oti can draw a shape, looking carefully at each different part of the algorithm.

Learn and Explore	klAsk children to choose and draw a shape of their own using Oti. It might be good to start by drawing the shape themselves by hand and writing out the steps to create their algorithm. They must use their knowledge about length of sides and angles to help them. When they are happy, use the app to program Oti-Bot and see if their steps were correct. If the shape goes wrong, encourage children to identify which steps they need to review and *debug* their program to make the change. When ready, extend learning by looking at the repeat function to simplify the program if possible, for example when drawing a square.

Make it accessible	Add a challenge
If necessary, provide children with more examples of preloaded programs for drawing shapes using Oti-Bot, to build confidence. Ask children to draw a slightly larger shape, then one given on a preloaded program so only a small adjustment must be made to the programming. Or keep to just drawing simple shapes repeatedly to embed understanding, such as making a pattern by drawing squares etc.	You might also want to extend learning with some mini challenges. *You many need to adjust these based on the mathematical areas you have taught.* Here are a few examples you could try: • Can you draw a symmetrical shape? • Can you create a shape with a specific area (e.g. programme Oti to draw a square with the area of 16cm²? • Can you draw a shape with a right angle? • Can you programme Oti-Bot to create a symmetrical pattern?

Review and Reflect	Embed children's learning by finishing with a quick debugging activity. Show children a program for drawing a square (or other shape), but make sure there is at least one error in it. Ask children to try and spot the mistake and suggest what they would change. Try out the suggestions using Oti-Bot. Suggested reflections questions: • What have you learnt today? • What are your 3 top tips for programming and debugging?

Many thanks to Jodie Lopez for her support with creating lessons for developing skills using Oti-Bot.

Enjoy exploring, learning and discovering with Oti-Bot!