

Case Study 1



Glow and Go Bot

(EY10564)

The staff and children at Brampton Primary School enjoy exploring and learning with Glow and Go Bot. Read about how they use Glow and Go Bot and the impact they are seeing on the children's learning.



“The bright lights and the design of the robot mean that it is a very motivating resource – everyone is keen to have a turn!”

Why we chose Glow and Go Bot?

We are an Early Years Unit based in a fairly large primary school in Chesterfield, Derbyshire. The Glow and Go Bot was purchased to support the use of positional and directional language in addition to giving children an early taste of programming in preparation for the Computing curriculum starting in Year 1. We also felt that the Glow and Go Bot would be a really motivating resource to support the development of key skills in other curriculum areas.

Ways we use Glow and Go Bot

Initially, we encouraged the children to explore the Glow and Go Bot on the dance setting. We turned out the classroom lights and the children enjoyed watching the lights, moving to the music, and dancing along! This was particularly popular with our children with additional needs – especially those that are visually sensory seeking. At our school, we also have an enhanced resource unit for children with Autism. The robot is used within the sensory den and really helps to meet the sensory needs of some of our children.

Within the Early Years classroom, we also experimented with the movement setting. This setting works very much like a Bee-Bot, but the controls are easier for young children to understand. Children can program the robot to move forwards, backwards, left and right. The Glow and Go Bot doesn't have an option to rotate which is something that our children in EYFS have found difficult with the Bee-Bot in the past.

The children within the setting were quickly able to program the Glow and Go Bot to travel in a sequence of movements to a set space. We found that our alphabet floor rug was a perfect place for the children to direct the robot as they could choose an alphabet square to aim for before programming the Glow and Go Bot accordingly. The programming of the Glow and Go Bot was a really useful way for children to develop their use of positional and directional language as well as teamwork skills. We then extended this oral use of language and started to write a sequence of instructions for the Glow and Go Bot using directional arrows.

Setting three was a particular hit with the children! This setting allows children to create sequences of music. The Glow and Go Bot plays a different tune depending on the coloured button that has been pressed. Children can press a sequence of buttons to create their own piece of music. Each button also has a shape printed onto it. This allows us to record the sequence of music onto a page so that we can play it again as well as supporting shape recognition. Completing this activity is a great way to develop early music composition skills as well as work on repeating patterns.

Continued on next page...

Case Study 1



CONT.

We enjoy using the Glow and Go Bot as a motivating resource within lots of different curriculum areas. Some of the ways in which we have used the resource include using the Glow and Go Bot to land on chalk numbers or shapes in the playground, creating treasure maps for the robot, and building tracks for the robot to navigate using a range of different construction sets - the possibilities are endless.

The impact Glow and Go Bot has had

The Glow and Go Bot is a great way for children to develop their problem-solving skills as well as critical thinking and perseverance! In addition to this, it is perfect for developing mathematical language, attention and listening, as well as early programming and music composition skills. Even after engaging with the Glow and Go Bot for a short time, we could see a difference in the children's ability to program and problem-solve in order to achieve a desired outcome.

The bright lights and the design of the robot mean that it is a very motivating resource – everyone is keen to have a turn! As such, this makes it a great tool to engage children in other areas of learning that they might not normally choose to take part in. This was particularly the case with mark-making. The Glow and Go Bot was great for giving mark-making activities a real purpose!



- Many thanks to the staff and children at Brampton Primary School for sharing their thoughts with us.

Case Study 2



Glow and Go Bot

(EY10564)



The staff and nursery children at Windale Primary School were Terrific Testers and trialled Glow and Go Bot. Read about how they introduced Glow and Go Bot into their setting and what they learned.

One of the ways we have used Glow and Go Bot in the Nursery at Windale Primary School.

Having introduced the Glow and Go Bot to the children previously, we set the children a challenge to see if they could direct the robot towards a given shape on our circle carpet mat. The children had to estimate how many times they needed to press the correct direction button to get it to land on the named shape. The activity was done in small groups of 3 to 4 children, but more asked to join in.

Areas of learning that we focused upon

We focused primarily on communication and language for key vocabulary, PSED for turn-taking and sharing, but also Maths for the use of directional language e.g., forwards, backwards etc.

We also introduced the Glow Bot to some of our children with SEND and they explored it across a period of time.

Our observations

Having modelled the activity for each group of children, they then took it in turns to program the Glow and Go Bot to travel to a given shape on the carpet. The children were able to start to use directional language e.g., forwards, sideways, and backwards.

Some children engaged with the activity quickly and were able to make sensible estimations as to how many times the corresponding button needed to be pressed in order to get it to the desired carpet shape. Some other children preferred to just make the Glow and Go Bot move one space at a time, in a more controlled way, to ensure they got it right.

Child A - "When you press the arrow it goes that way" "I want it to go backwards" "Press the star and it moves".

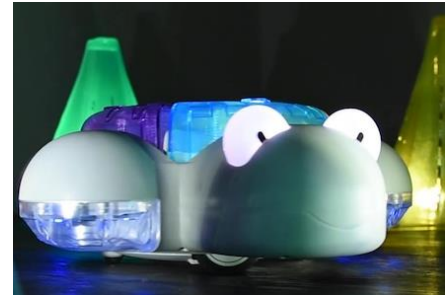
Child B - "I want it to go to the purple circle, 3 times forward"

Other children were able to demonstrate their counting skills but counting out loud the number of times they pressed the button and then again to count the number of spaces the Glow and Go Bot moved.

With our SEND children they initially interacted with the Glow and Go Bot on a 1:1 basis with an adult. We modelled the 'my turn', 'your turn' vocabulary to encourage turn-taking. Over a period of time, the child was more able to wait her turn, so we introduced her to taking turns in a small group of 3 children.

Continued on next page...

Case Study 2



CONT.

Again, using the 'child's turn, then your turn' model, she was more patient when waiting her turn. This linked really well to her EHCP targets for interacting with others during a similar activity. Through exploring the Glow and Go Bot independently, the child also worked out how to make the Glow and Go Bot dance and responded by dancing along to the music. The child also tolerated another child coming and dancing alongside her and there was evidence of eye contact with the other child.

Our other SEND child really enjoyed the setting that just played the sounds and lit up. He was able to press the buttons independently to make the sounds he liked.

Overall, the Glow and Go Bot is enjoyed by all children but has the biggest impact on our SEND children and our older, higher-ability children (moving onto early programming skills).

Some other ways we have used Glow and Go Bot

- Early Programming Skills – cause and effect
- Turning lights off and following it in the dark.
- Dancing with the Glow and Go Bot – copying its moves.
- Putting an object in the middle of the circle- who can get the Glow and Go Bot closest to the object?
- Playing a game of 'find the sound/colour'- can the children remember which button made a certain sound/light up a certain colour?
- Programming a specific planned route- mini obstacle course but having areas that have to be avoided e.g. a swamp.
- Designing a home for the Bot.



- Many thanks to the staff and Nursery children at Windale Primary School (United Learning) for sharing their thoughts with us.

Case Study 3



Glow and Go Bot

(EY10564)

Children at Think for the Future (TFTF) Tots Nursery love learning with the Glow and Go Bot. Read on to find out their intent for using the Glow and Go Bot, how they implemented it and the impact it has on learning.



When reflecting on how Glow and Go Bot has been used in their setting, Ellie Fox, Nursery Director, has broken this down into Intent, Implementation and Impact.

INTENT:

In line with our commitment to incorporating technology into the curriculum, TFTF Tots decided to introduce the Early Technology Light-Up Glow and Go Bot into the setting to enhance the children's understanding of technology. This case study explores the implementation of the product and its impact on the children's learning outcomes.

IMPLEMENTATION:

The nursery staff at TFTF Tots carefully planned the introduction of the Light-Up Glow and Go Bot to ensure a smooth integration into the curriculum. The resource was initially introduced in a slow and gradual manner, allowing the children to become familiar with its features and functionalities. The staff started by demonstrating the different modes of the bot, such as its ability to move forward, backward, and turn.

To make the learning experience more engaging, the staff incorporated various props and activities. For instance, they used tape to create routes for the bot to follow, encouraging the children to understand and follow directions. This activity not only enhanced the children's understanding of direction vocabulary but also improved their critical thinking and problem-solving skills.

IMPACT:

The introduction of the Light-Up Glow and Go Bot had a significant impact on the children's learning outcomes at TFTF Tots. The resource facilitated the development of technology understanding among the children, as they were able to explore and interact with a technological device in a safe and controlled environment.

The use of the bot also had a positive impact on the children's music and movement skills. The nursery staff incorporated music into the activities, encouraging the children to move and dance along with the bot. This not only made the learning experience enjoyable but also helped the children develop their coordination and rhythm.

Continued on next page...



Case Study 3



CONT.



Furthermore, the Light-Up Glow and Go Bot aided in colour identification. The bot's vibrant lights and different coloured buttons allowed the children to associate colours with specific actions or functions. This activity helped improve their colour recognition skills and enhanced their ability to differentiate between various hues.

Moreover, the introduction of the bot encouraged critical thinking and problem-solving skills among the children. As they followed the routes created with coloured tape, they had to analyse and strategise their movements to ensure the bot followed the correct path. This activity promoted logical reasoning and problem-solving abilities among the children.

IN CONCLUSION:

The implementation of the Early Technology Light-Up Glow and Go Bot at TFTF Tots proved to be highly beneficial in teaching technology to young children. The slow introduction, coupled with the use of props and activities, enhanced the children's understanding of technology, direction vocabulary, music and movement, colour identification, critical thinking, and problem-solving skills.



Many thanks to Ellie Fox, Nursery Director at Think for the Future Tots Nursery for sharing her thoughts with us.

Case Study 4



Glow and Go Bot

(EY10564)

Woodlands Nursery and Forest School have kindly shared their learning experiences with Glow and Go Bot with us. Read on to find out more..

Incorporating screenless technology into the nursery

We have been experimenting with the different ways we can incorporate technology into all ages within the nursery without the typical use of a screen. We recognise that children are being exposed to more and more technology at the moment and we are keen to support with this in a way that supports socialisation, communication and language.

Introducing Glow and Go Bot

When we introduced to the Glow and Go Bot, we were eager to start at the oldest of ages and work down the rooms. We offered this to the out of school children which included our reception and year one as an unboxing reveal activity. The group used the picture card that comes with the robot to work together, and problem solve how to use it and what different features it had. They tested their ideas, reflected on what worked well and repeated. The group then challenged each other to create obstacle courses.

Glow and Go meets our three to four-year-olds (Preschool room)

In our preschool room, our 3 and 4-year-olds were inspired by the turtle-like appearance and took a more nurturing approach to the exploration. Affectionately named by them as 'Tony the turtle', the preschoolers enjoyed making 'him' a home from construction blocks and discovering that he becomes the perfect 'dance buddy' with music and lights. Tasked with creating a sequence, the children had been listening to and copying the staff on how to press the buttons which resulted in 'Tony' moving forwards and backward. Once armed with the tools on how to operate the robot, the preschoolers were then encouraged to explore freely which resulted in investigating further to discover it can turn, light up, play music, and dance! As the controls are as simple as pressing each of the large buttons, this proved to be a popular child-led activity that was robust enough for us to leave in their control. The group was able to have hands-on experiences to discover the cause and effect of the buttons whilst building upon their sequencing knowledge. Early group explorations involved guessing how many times they would need to press the forward button for 'Tony' to reach his house that had been created with blocks earlier that morning. The children documented their estimates on paper and then put their ideas to the test. Collaboratively, the group continued to move the robot around the classroom to estimate how many turns or moves were needed to reach certain destinations. One little boy gathered a clipboard and pen, trying to create his own representation of each button so that he could create 'instructions' for his friends to copy. **Continued on next page...**

Case Study 4



CONT.

Glow and Go Bot meets our toddlers

Our toddlers have incorporated technology into their music and movement sessions by using ipads to copy dance moves or play a particular song. However, we have been reducing screen time and have introduced them to the Glow and Go Bot. Once in dance mode, the toddlers were able to stand in a circle with the robot in the centre, lighting up, spinning, and playing music. They were then encouraged to take turns, press the buttons, and respond by copying or reacting.

Go and Go Bot meets our babies (from 10 months)

In our baby rooms, the robot has been offered out on dance mode, where the children were encapsulated by the flashing lights and sound as it moved from side to side. Some of babies of around 10 months old reached out to feel the different textures on each button with both with their hands and mouths. As it moved across the floor, some of our more mobile babies were crawling after it, watching the light and shadows around the room too. As they reached the robot, they would tap the large buttons and await a response.

A brilliant addition with many learning outcomes for different age groups

Light Up Glow and Go Bot has been a brilliant addition each of the rooms and the children's development, particularly in;

- **Physical Development** - fine motor skills as the children use their fingers to operate buttons (and write instructions) and gross motor skills when squatting and balancing to operate them.
- **Communication and Language**- learning from back-and-forth interactions , questioning each other, and learning to listen to one another.
- **PSED** – building upon relationships during teamwork, developing confidence to speak about own ideas, finding solutions to conflicting ideas.
- **Mathematics** – counting the number of buttons pressed, estimating, using mathematical language, discussing routes, and using words for positioning.
- **Understanding the World** – understanding that actions have an effect, exploring how things work.
- **Expressive Arts and Design** – responding to sounds emotionally and physically, using imagination.

In Conclusion

Overall, we have been impressed with the ability to meet the 'fix' for light and sound exploration without the need for a screen. This has covered more areas of the EYFS and characteristics of effective learning than a tablet would offer.

Many thanks to Deanna Leman, Nursery Manager at Woodlands Nursery and Forest School for sharing her thoughts with us.

Case Study 5



Glow and Go Bot

(EY10564)

Paola Lopez, Founder and Executive Director at Kinderoo Children's Academy, Inc, shares their experiences with Glow and Go Bot and explains how it brought the magic of early technology into the setting.

We ventured into a unique experience in our classroom where we encountered the magic of early technology, exploring a fantastic new resource that exceeded our expectations and left us wanting to continue having fun and learning – the Glow and Go Bot. This intriguing bot filled our days with many learning moments and unforgettably fun experiences.

The Glow and Go Bot filled both the children and adults with great interest, inviting us to plan strategies to observe their light-filled movements and train our technological skills. Furthermore, there were three stimulating elements that made it particularly interesting: light, sound, and movement. These elements enabled the children to make interesting connections about cause and effect.

To complement the experience, a complete environment was designed with materials, full of light and color on a black background to highlight the colors of the lights from the bot. Through previous observations, we have realised how the effects of light in a dark classroom create a unique sensory effect that invites the children to immerse themselves in the experience before them, using their five senses.

Within our general observations, we could see how the behaviour of the group that participated in this proposal presented some similarities, at least in the first period of participation.

Continued on next page...

Case Study 5



CONT.

Observations of Play

- 1.Observation and analysis: The children watched and gained a sense of the scenery around them. They began to understand how everything in front of them was wrapped in light, sound, and movement. Seeing what was around, they moved on to the second step.
- 2.Understanding how everything that surrounded them was within their reach, they tried to move forward to touch and feel with their hands.
- 3.They realised that when they touched one of the bot's buttons, a series of responses began to emerge. They understood the effect of their actions in response to the bot (early coding skills).

Cause and Effect

Entertained by the path of cause and effect, the children became aware of their actions (Cause/effect). The children who participated in this proposal began to understand that pressing a button turned on the light, pressing a button moved the bot, and even played music. It was interesting to see how one of the girls who participated would move as if she were dancing to the music.



Continued on next page...

Case Study 5



CONT.

Another essential aspect to highlight was the face of astonishment that some of the children showed at the fact of being close to technology, using the impulse that curiosity gives as a tool.

Among the most outstanding actions were the attempts that the children made through trial and error, testing and evaluating how they would finally manipulate the bot to move freely. When the children discovered that, with just the movement of their fingers, they could apply to a button, they dedicated themselves to observing the movement it made, the lights it reflected, and the sound it produced. They then focused on observing the response of the bot and immediately tried again as a repeated action.

Something exciting and worth mentioning is that for the development of social and emotional skills, the bot provided great benefits since the children began to relate to each other, referring to the colours and movements together. They all smiled with joy on their faces, showing empathy for their friends and the bot.

Regarding language, it can be said that this resource brought great benefits, verbally and non-verbally, merging technological skills with creativity and design.

In this experience with the bot, we understood the possibility of approaching technology to enhance and promote the wonderful experience of learning. This resource has all the elements that lead us to an experiential learning experience, full of meaning while simultaneously inspiring our children to develop potential abilities and continue confirming that light makes possible and always invites a world full of discoveries that leave experiences full of magic.

Many thanks to Paola Lopez, Director and Founder at Kinderoo Children's Academy, Inc, for sharing this with us.



Case Study 6



Glow and Go Bot

(EY10564)

Molly Howard (@create_make_and_play) shares the different learning opportunities created by **Glow and Go Bot** for children throughout the Early Years.

Over the past few months, we have been lucky enough to trial the Glow and Go Bot. This is a carefully considered robot, designed and developed by TTS who are educational specialists. The product innovation team at TTS have carefully considered all the elements and functions of the Glow and Go Bot to ensure that it provides babies and children with a good introduction to technology.

Through the light, sound, texture and movement of the robot, the Glow and Go Bot supports babies through to pre-schoolers to develop a firm foundation of early technology skills. The resource encourages child-led learning to take place as it offers simple activities yet allows more complex scenarios, which means the children will have the confidence to be independent when exploring the robot's functions. It is cross-curricular and supports a range of schematic behaviours. The light effects in a darkened room create a sensory, magical effect. It is an engaging, versatile robot offering a wealth of learning opportunities.

I have explored using this resource with my two children, Arlo (age 3) and Luca (age 4 ½ years), who are real-life examples of how this bot can be adapted at different early years developmental stages.

Whilst experimenting with Glow and Go Bot, I have explored the many ways that it can be used across the different developmental stages in Early Years.

Continued on next page...

Case Study 6



CONT.

10 months +

- Children start to develop curiosity and understand the relationship between cause and effect. Glow and Go is the perfect learning resource to encourage little ones to sit up and lean forward to press the buttons. As the bot changes colour, plays music and dances it will capture their attention, encouraging them to move their body parts in different ways, whether it will be their little legs kicking out with excitement or a little shimmy when the bot plays a tune.
- Offers a multi-sensory experience, enabling them to immerse in exploratory play, exploring their sense of sight, touch and hearing.

Toddler (aged 2)

This is the stage my youngest child Arlo (3 years old) is at, and he has become more familiar with the bot's functions. Through trial and error, he has learnt that if you press the arrow 3 times, the bot will move 3 times in that direction. He has learnt to interact and become familiar with the different sequences and moves the Glow and Go Bot has to offer. Arlo has developed his enquiry skills, allowing him to manipulate and manoeuvre the bot to make a sequence of moves or noises.

Pre-school (aged 4)

My eldest child Luca (4 1/2 years old), through lots of exploration with the bot, has gained a deeper understanding of cause and effect through curiosity and enquiry, providing him with the fundamental programming skills needed to independently program the bot to carry out several directions. This makes it the perfect child-led toy. He is also able to mirror the actions the bot is making.

Continued on next page...

Case Study 6



CONT.

Luca now has a deeper understanding of how to use the arrows to change the direction of the robot and is beginning to estimate how many times he needs to press the arrow to get the robot to move in one direction to land on a specified destination or even manoeuvre around objects. Just being able to do this highlights that Luca has also been using and developing his mathematical skills, for example, estimating, using directional and positional language and even beginning to measure distance accurately.

As the child gets older and more knowledgeable and gets to know the bot and its functions, they will be able to extend the number of commands, or as another option, you can sequence up to 10 commands.

Over the past few months, I have noticed that this exposure and experience with the bot has provided even more learning opportunities for both of my children:

- Cognitive development (curiosity, enquiry, problem solving through cause and effect).
- Motor Skills- Gross motor skills when imitating the bots moves and dancing rhythmically. Fine motor skills when pressing the buttons.
- Social skills through collaborative play (e.g., taking turns).
- Communication and Language skills (listening to each other and carrying out actions given by each other when working as a team, new vocabulary related to commands and movements etc).
- Mathematical skills (distance, estimation, number, directional and positional language).

Continued on next page...

Case Study 6



CONT.

- Knowledge of the world around them when setting up small world scenes for the bot to explore.
- STEAM skills when using other resources to create small world scenes for the bot.
- Multi-sensory (tactile buttons, colourful lights, different sounds when buttons are pressed and movements).



My son's teacher also got the opportunity to trial the Glow and Go Bot. This is what they said:

"The children of Wallaby Class have LOVED using the Glow and Go Bot! All the children within our provision have autism and have really benefited from the robot's multi-sensory nature – many of our younger children have been captivated by the lights and music! The different programmes have meant that children have been able to access different levels of challenge. It has been wonderful to see each child developing their understanding of cause and effect and starting to build early coding skills. Our older children have enjoyed making tracks and obstacle courses for the robot. We cannot wait to see how they use and make progress with the Glow and Go Bot moving forward!"

Class Teacher

Many thanks to Molly Howard for sharing this with us.