LEARNING
THROUGH LIGHT

The Magic of Glow

"Light transforms the ordinary into the extraordinary, the usual activities into magical experiences."

Ainhoa González and Ma Elena Martin Garcia

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PART 1

THE POWER OF LIGHT

"I have seen the awe and wonder as children's faces literally light up with joy, not just once, but over and over again."

Ben Kingston-Hughes

Light of the World

An introduction to explore the power of light by Michelle Reid.

From the early days of human history, light has been essential to our survival, our growth and our understanding of the world. Long before school, books and classrooms existed, light played a central role in shaping how people lived and learned.

Fire was a source of warmth and protection, helping early humans survive cold nights, cook food and ward off predators. The sun nurtured the plants that became our food, allowing civilization to flourish. When darkness fell, light was our guide - torches lit the way, allowing travellers to find their path, communities to stay connected, and knowledge to be passed from one person to another.

Light has always been intertwined with discovery. It has led explorers across vast oceans, illuminated the pages of handwritten manuscripts, and revealed the mysteries of the universe through telescopes.

And in a much simpler, yet equally profound way, light continues to shape how children learn today.

Memories that Last a Lifetime

Think of some of your most joyful memories. The ones that fill you with warmth and last a lifetime. No doubt that some of them are bathed in light. The glow of birthday candles flickering before a wish is made, the twinkle of fairy lights at Christmas, or the golden glow of a summer evening spent playing outside long past bedtime. Light is woven into the fabric of some of our happiest moments.

Celebrating with Light

Cultural and religious celebrations around the world recognise the power of light.

Diwali, the Hindu 'Festival of Light', fills homes and streets with oil lamps and fireworks, symbolising the triumph of light over darkness, knowledge over ignorance. At Christmas, homes are decorated with glowing trees and lights that bring comfort and togetherness. Chinese New Year is marked by stunning Lantern displays, and bonfires and fireworks light up the night during Guy Fawkes celebrations.

Across cultures, light represents hope, joy, and a sense of belonging.

Awe and Wonder

Even the simple act of watching fireworks bursting into the night sky fills us with awe. We are drawn to the dazzling patterns and the fleeting brilliance of colour against the dark.

This deep-rooted response is not just cultural - it is something within us, something that connects us to our ancestors who once gazed at the stars with the same sense of wonder.

Many children are drawn to light. Their fascination with glowing objects, reflections and shadows seems not to be just curiosity, but perhaps an instinctive response that may be shaped by evolution.

The human eye is naturally attuned to brightness and contrast. Long ago, being able to detect the flicker of movement in firelight or spot a glint of water in the distance was important for survival. This may explain why light-based play is so captivating.

Babies stare in wonder at a slowly rotating glow sphere, toddlers giggle as they mix colours with beams of light, and young children become entranced by the shadowy and magical worlds they can create with a light projector.

When given resources that light up and glow, children instinctively explore their surroundings in new ways - shining light through their fingers, watching patterns dance across the walls, or discovering how objects change when backlit.

Suddenly, the ordinary can transform into the extraordinary!

Using Light to Enrich Learning

As educators, we can use this natural attraction to light to enrich learning experiences and to increase engagement. Light and shadow play introduces children to scientific concepts such as opacity, translucency, and reflection without the need for complex explanations. Children develop early scientific thinking without even realising it. Consider a child experimenting with a torch under a blanket. They instinctively test what happens when they shine the beam through their fingers, noticing how the shadow changes as they move their hand closer or further away. They may begin to wonder why some materials let light through while others block it completely. These are early foundations of physics, learned through play rather than textbooks.

Sensory Experiences

For children with additional needs, light can be a powerful tool for sensory engagement. Light- up resources such as light up bricks and fibre optics can be used in sensory rooms or play to help children self-regulate, providing a soothing visual experience that encourages focus and relaxation.

In Conclusion

The way we respond to light seems to be deeply ingrained in us, shaped by thousands of years of evolution. It connects us to the earth and our ancestors of years gone by. It can fill our most treasured memories with happiness and joy. Most importantly, it sparks curiosity in young minds, inviting them to explore, discover and wonder. One of the most beautiful things about light is that it invites exploration.

There is no right or wrong - **only endless possibilities.**

About the author: Michelle Reid

Michelle has worked in education for over 20 years. She started her early career as an Early Years Practitioner working in a private day care setting before training to become a Primary School Teacher. She has had a variety of roles including a senior leader in a primary school, curriculum leader, school governor and has also worked alongside the Local Authority.

Bringing Joy Through Light

by Ben Kingston-Hughes

Fascination with Light

The subject of this article, light, is something that is guaranteed to put a smile on my face. You see I have a bit of a secret. I deliver a whole range of training on outdoor and imaginative play and love using natural resources to create unique moments of play. I have a huge range of resources that I use with our vulnerable children's groups, from old cardboard boxes and recycled scrap materials to purpose bought items and toys. However, in amongst all of our kit, there is one type of resource that makes me smile every single time. I just can't get enough of "things that light up!"

And I am not alone in this weird fascination with light up resources. Every time I bring out the light up bricks, for instance, there will be an audible "ooh" as they light up. This is regardless of whether I am delivering a children's session or an adult training session, there are just some children and adults for whom light up resources create a very special kind of joy.

Magical Moments

On one of our adoption activity days, we worked with a little boy who had made a magic potion out of green food colouring and glitter. In order to make the potions truly magical, we have a light box which makes the potions glow. The child, who was sat on an adopter's knee, placed the potion on top of the lightbox. As the potion glowed, he began to physically shake, and something appeared to bubble up inside him. With a look of absolute awe and wonder, he squeezed the potion as hard as he could, which promptly shot out and hit the adopter in the face. There was a moment of stunned silence and then they both laughed together whilst the green food colouring dripped down the adopter's face.

This is not merely some fleeting, nebulous experience but a moment of pure joy with a visceral and physical reaction. It was also a wonderful moment of bonding between the child and the adult as they shared that joy.

So, I suppose here is the question. Potions are great but why is the experience so much more magical when they light up? Building bricks are always a fantastic resource but why are the light up bricks so much more stimulating?

My Love of Torches

If anyone doubts my credentials to write about "things that light up" I should point out that I am an avid torch collector (or geek as my friends call me). I have over 30 torches and know the brightness in lumens of each. If you ever meet me in person, I guarantee I will have at least three torches with me and in fact, I sometimes mention that I collect torches on training courses in the vain hope that someone will approach me afterwards and admit that they too collect torches. Then I will have made a special friend. This has never happened.

So, whether or not you think I have taken things too far with my passion for torches, light has clearly played a huge role in human evolution from the first time we used the stars to navigate, to the advent of fire to chase the darkness away. There is something primal and uniquely powerful about our ability to manipulate and produce light. Is it our innate fear of the dark that makes us love light so much? Or is it the tiny bit of us that desires the power to push back the darkness?

As one of the most fundamental and powerful forces in the universe, our human capacity to manipulate light brings a feeling of empowerment to even our very young children. The ability to wield light, to instantly illuminate things and bring clarity is universally empowering and if you give a child a torch or source of light you will see this empowerment.

Lighting Up Adventures

One of the many things we do with cardboard boxes is to create a branching tunnel system, covering the joins with den making fabric so that the tunnels are very dark inside. We then give children torches so they can explore their very own caves where they can hunt for hidden treasures (or biscuits!) I cannot overestimate the level of excitement that this simple activity causes as the children explore their very own biscuit mines.

Recapitulative Play

In Bob Hughes' Taxonomy of Play Types, he describes "Recapitulative Play" as play that displays aspects of human evolutionary history. This is arguably one of the most difficult of the 16 play types for modern children to engage in, and yet I believe the human fascination for light and light up objects does just this. Some of our most modern and "technological" toys actually support very primitive aspects of humanity.

Light is not just empowering though. It is also comforting and reassuring, representing safety and security for countless generations of humanity. After all, as all children know, it is not the dark that is frightening but the monsters who live in the dark, and the one thing monsters fear is light. From those earliest days of using fire to scare away predators, to the comfort of a night light in a child's room to help them sleep, light represents safety. Light up resources bring joy, empowerment and a feeling of comfort. Even the most anxious of children will brave the biscuit mines if they have a torch or source of light to light the way.

Learning through Light

Let's not forget that in Simon Nicholson's theory of Loose Parts Play, he cites playing with forces as an integral part of enriched play environments. Playing with light and shadow is hugely beneficial for children and intrinsically rich in terms of spatial awareness. The fact that a shadow becomes bigger the nearer to the light source is innately mathematical. Simple shadow play with children can help embed complex scientific concepts whilst providing them with joyful explorations. It is also a fantastic way to make stories come to life. The value of Sensory Play in developing brains cannot be overestimated and our early explorations with light and shadow are a wonderful way to embed Sensory Play into our settings.

Light, Dopamine and Unexpected Happiness

But why do we experience such joy when things light up? Well, there is one aspect of biochemistry which might explain this. It turns out that one of the so called "happiness hormones" is a neurotransmitter called dopamine. Dopamine is integral to our reward system, and we produce it when we achieve things or when we eat a wonderful meal for instance.

Here's where things get interesting though. You all know that there are feelings of pleasure or contentment when you receive your pay for the month. But you also know that this is nothing compared to the feeling of pleasure that you experience when you find a tenner in your jeans pocket that you did not know was there. Even though the wages is a much higher amount, we derive more pleasure from the unforeseen but lower amount of money. It turns out we produce more dopamine if the happiness is unexpected. So, the child who did not know that the potion was going to light up experienced a unique moment of joy. He also potentially produced more dopamine because the joy was unexpected. I believe that childhood should be full of those "unexpected happiness" moments.

And here is the best thing of all. I also believe there are some experiences that transcend the "first time" joy of the unexpected. Experiences that keep producing dopamine again and again because they are so fascinating they continue to engage long after the first time has passed. We have all seen fireworks before and yet we still "ooh" and "aah" at each firework. When I demonstrate the light up magic potions to adult trainees, they don't just "ooh" the first potion but every subsequent one. I genuinely believe that for some children "things that light up" continue dopamine production long after the surprise of the first time. I have seen this in the awe and wonder as their faces literally light up with joy, not just once, but over and over again.

To Sum It Up

So, am I saying that we should always use light up resources? Of course not. Equally I am not saying that outdoor experiences with natural resources can ever be replaced by any amount of technology. What I am saying is that there are unique moments of joy to be had through use of light up resources, empowering our children to manipulate one of the fundamental forces of the universe and unleashing their inner god.

So, let's see what joy you can bring to your children, giving them that unexpected ten-pound note in the pocket feeling, supporting them to play with light and shadows, feeling safe, excited and awed all at the same time. Oh, and maybe ask me about torches when you next see me.

About the author:
Ben Kingston-Hughes

Ben Kingston-Hughes is an international keynote speaker, author and multi award-winning trainer. He is the Managing Director of Inspired Children and has worked with vulnerable children across the UK for over 30 years. He has appeared on television several times working on a variety of children's projects, and his distinctive blend of humour, neuroscience and real-life practical experiences have made his training invaluable for anyone working with children.

Educational Pioneers and Light

by Dr Diane Boyd

This article reflects upon the ideas of the key historical pioneers and how they might have possibly answered questions about why we need light.

The importance of natural light

Natural light comes in the form of sunshine and is an essential part of all living things. Both the human and more than human world are dependent on sunlight and fresh air to maintain our physical and mental capacities, resonating with Sustainable Development Goal 3 (SDG 3), Good Health and Wellbeing (UNESCO,2015).

All historical pioneers advocated for children to be in, with and for nature, and to understand seasonal changes. Consider for example, how the sun climbs through the sky over the course of the day, casting shadows, and how the intensity of the sunlight changes through cloud formations and dusk approaching. Reflect also on how sunlight changes through the seasons, creating natural organic scientific questions to emerge.

But children also need to understand how nightfall creates difficulties in seeing as the natural light of the sun has moved, posing questions such as 'What can we use to be able see and live?'

Exploring Artificial Light

Artificial light brings new questions. Initially, 'Where does it come from?', and 'How is it made?' These questions highlight different forms of energy as sources of light (candles, oil and electricity) resonating with SDG 7, Affordable and Clean Energy (UNESCO,2015). They also provide new learning experiences about what artificial light can do and how it can be changed through colour and movement.

Educational Pioneers

Froebel nurtured the child through ensuring they spent most of the time outside in the fresh air and sunlight; Montessori felt that education and the supporting environment opened the child's potential, like a flower opening and uncurling in sunshine; Steiner drew upon the culture of the child and immersed them in myths and festivals that celebrated light, whereas Malaguzzi demonstrated their 100 languages through the Ray of Light.

Friedrich Froebel (1782-1852)

Froebel the Garden of Children – sunlight to nurture and grow.

The idea of the kindergarten (Garden of Children) came to Froebel when searching for the right name to call his idea. He was opposed to the word 'school' as he felt it was contrary to his idea of a 'place to nurture and foster' because school just seemed to put facts into children's heads.

He wanted a place where children could observe, reflect, question and become fully aware in their learning so he drew upon his own learning experiences. The Garden metaphor was used because of his training as a forester. Froebel knew what all seedlings, plants and animals needed to both flourish and survive - being outside in the sunlight.

The name Kindergarten supported the notion that the educator like a gardener would tend, nourish, care and cultivate the child in the same manner as the seed is cherished from sowing. He recognised that children, like seeds, needed a safe and secure place to grow. They need basic nutrients of water and food to survive, and they especially need fresh air, sunlight and sunshine to open their true potential.

Froebel saw that the child and nature was interconnected and unified. Nature through the garden enabled children to develop holistically. Not only did the plants represent the children as unified to the whole, but provided opportunities for them to understand responsibility and care for the other. The 'other' being both the plant and each other (and community). Froebel insisted each child had a plot of land to plant, to tend and care for, so they too would understand the importance of what is needed to nurture all living things. By immersing children in nature, it will help children to learn the interrelationship of all living things, or as Froebel said, "the unity of all things" (Liebschner, 1992, p39).

Providing such learning moments enables critical thinking, questioning about key issues of climate change and all three pillars of sustainability to evolve naturally and organically, like the seed pushing up through the earth looking for the sunlight to blossom.

Maria Montessori (1870-1952)

Montessori - Awakening the inner creation – key to lightening up their World

Montessori felt that education must and should cultivate and awaken the inner creation. This awakening would lighten up their thinking, their world and how they can function as social actors within it. She highlighted in her 1946 Lectures in London (p 66), that "the inner creation must have an exterior expression" too. Montessori felt that as educators we can help indirectly, firstly it is through creating the right environment. She felt children learnt better being surrounded by lots of other little people, like themselves, talking incessantly.

Educators needed to support their pronunciation of language and to always encourage their efforts, because a discouraged child "will lose enthusiasm and just sleep". Montessori talked about giving children courage, and this was clearly apparent with her teachings about belonging in a social capacity. She felt that the right environment needed to nurture their social development must be social in nature. Just as Froebel earlier had recognised that children and nature are one and the same, needing the same requirements to flourish and blossom, and the interrelatedness of the whole, Montessori too recognised that children are part of a social web. Montessori clearly highlighted this in her writings The

> **"Set the children free ... let them shout and laugh when the sun wakes them up in the morning as it wakes up every other living creature."**
>
> *Maria Montessori*

Discovery of the Child (1948), when she stated, "Set the children free.... let them shout and laugh when the sun wakes them up in the morning, as it wakes up every other living creature..." This was her 'Cosmic' view of the planet, that all is interconnected and interdependent. This awareness could not be just given, this inner creation needed to be awakened.

Montessori's cosmic educational perspective was sustainable and ecological, and as Froebel emphasised, there must be a harmonious balance between nature and humanity. Through their inner awakening with harmony in nature, children are encouraged to become independent, to critique and be a morally responsible member of society, resonating with the key skills needed for the 21st century, UNESCO (2017). During the years of 3-6 years old, Montessori saw this as the "embryonic period for character and society" - Montessori, 2007, as this is the crucial time when fundamental attitudes and values are formed, and "a sense of society is developed" - Emerson and Siraj-Blatchford, 2018. Montessori argued that to have a peaceful world and society, it depended upon the responsibility and independence of everyone, starting with the youngest members of the community. As educators we need to provide the right environment that lightens and awakens children's inner creation and nurtures a strong sense of cultural awareness and social responsibility.

Loris Malaguzzi (1920-1994)

Malaguzzi and The Ray of Light Atelier

The Reggio Emilia philosophy in Northern Italy emphasises the importance of drawing on all aspects of community and society. Everyone has a place with inter-disciplinary pedagogical workings of Reggio Emilia - from the ordinary everyday life of people in the piazza, parents and grandparents, to local architects, musicians and scientists. The school reflects the outside, with an inner piazza and pockets of places for conversations and possibilities. The children are encouraged and provoked, and the educators follow the children's thinking, wherever it may go! Like Froebel and Montessori, Malaguzzi wanted to awaken the children's natural curiosity and provoke 'awe and wonder'. Malaguzzi, like Montessori, felt that education needed transforming as it killed children's creativity. He likened children's creativity to 100 languages of dance, art, music, moving, laughing and feeling. He suggested that schooling only focused on memorising facts, not lighting up curiosity, resonating with Froebel's' initial idea for the kindergarten not to be called a school.

Projects or provocations are collaborations, and all are seen as research possibilities that have no ending, as learning is a continued process. One such project was The Ray of Light Atelier created in 2005. This space is described by Reggio Children as a "place of research and experimentation where light in its different forms is investigated, through explorations provoking wonder and curiosity, and which stimulate creativity and deeper knowledge".

Within every early childhood setting in Reggio Emilia, you will find Light. The Ray of Light Atelier provides children with different ways of looking at both light and their world, either individually or through interaction and co-operative learning. Reggio Children state that children have opportunities to explore the phenomena of light in the atelier by breaking the light down into colours, for example infra-red and ultra-violet rays. The rays of light can be reflected, refracted, diffracted, disassembled, emitted and propagated (Reggio Children). As a result, the children can experience mystery, surprise, awe and wonder, fantastical and imaginative experiences. In their exploratory play children are researching and experimenting different aspects of light which will stimulate their 100 languages of creativity and deepen their scientific knowledge of the world.

Rudolph Steiner (1861-1925)

Rudolph Steiner and The Yearly Rhythm

Within the Steiner kindergarten, cultural myths were an integral part of philosophy, and pedagogy and festivals were seen as seasonal rhythms. Steiner perceived the natural environment and life as a "living, breathing organism" - Oldfield & Boyd, 2018.

In the kindergarten during the summer months, the children are enticed into golden stories of fairies, long dreamy days of sunshine and light. During this season the children are 'lighter', 'freer' and less grounded due to the earth having already exhaled (natural rhythm).

One festival that is marked by Steiner kindergarten is the Festival of Fire, when older children jump over the fire as they move from the lightness of the carefree Summer season into the approaching darkness of Autumn and Winter. The jump represents jumping from light over to darkness and each child is encouraged to reflect, and write a wish tied into a fir cone bundle and placed on top of the prepared fire. The younger children collect flowers in baskets and make posies to give out as gifts during the fire festival.

The children, staff and parents all form a circle and as the flames take, walk around together singing the fire song. The song reinforces the cyclical story of the natural rhythm of the sun, ripening the grain and making the plants and trees grow. When the darkness of Winter comes, the trees are there to chop down and warm our homes. After the long darkness of Winter, February 2nd brings the advent of Candlemas, which means literally 'candle-less' as the days are longer and the brightness of Spring approaches. Little pots of Spring colour are popping up with the white shoots of snowdrops, symbolising new life emerging from the dark earth and so the circle of life begins again.

The Steiner philosophy highlights this natural rhythm, which challenges us as educators to slow down and engage with the children in these daily and seasonal elements of their year. We need to challenge the digital age of speed and availability at the click of a button and immerse children in wallowing moments of lightness within their natural world. Druitt, Fynes-Clinton and Rowling, 1995, suggest we have freed ourselves from "these mighty rhythms of nature" because now we can have anything, regardless of season, just delivered. Immerse young children in slowing down, reflecting on the awe and wonder of our interconnected planet and celebrating each glorious season.

In Conclusion

This article has hopefully highlighted the importance of developing exploratory threads of inquiry in early childhood. Educational pioneers such as Froebel and Steiner recognised the importance of why children needed to be immersed in natural light for vitamin C and a healthy glow. They also highlighted through their outside space, the importance of the connection to the natural environment and responsibility for its care, to enable an abundance of vibrant flowers, vegetables and plants. Both children and the natural world need the same ingredients- fresh clean air, water and sunshine (light)!

Additionally, we see how artificial light can also be used as an investigative tool. Montessori knew the importance of close observation and scientific inquiry, and now microscopic tools are available with high quality lens and lighting, that magnifies the experience. Malaguzzi recognised the creative and artistic power of light and shadow to channel the 100 languages of children. In early childhood it is important we engage children with all of their inner and outer senses and light, both natural and artificial, as these open up new lines of thinking and exploration.

About the author:
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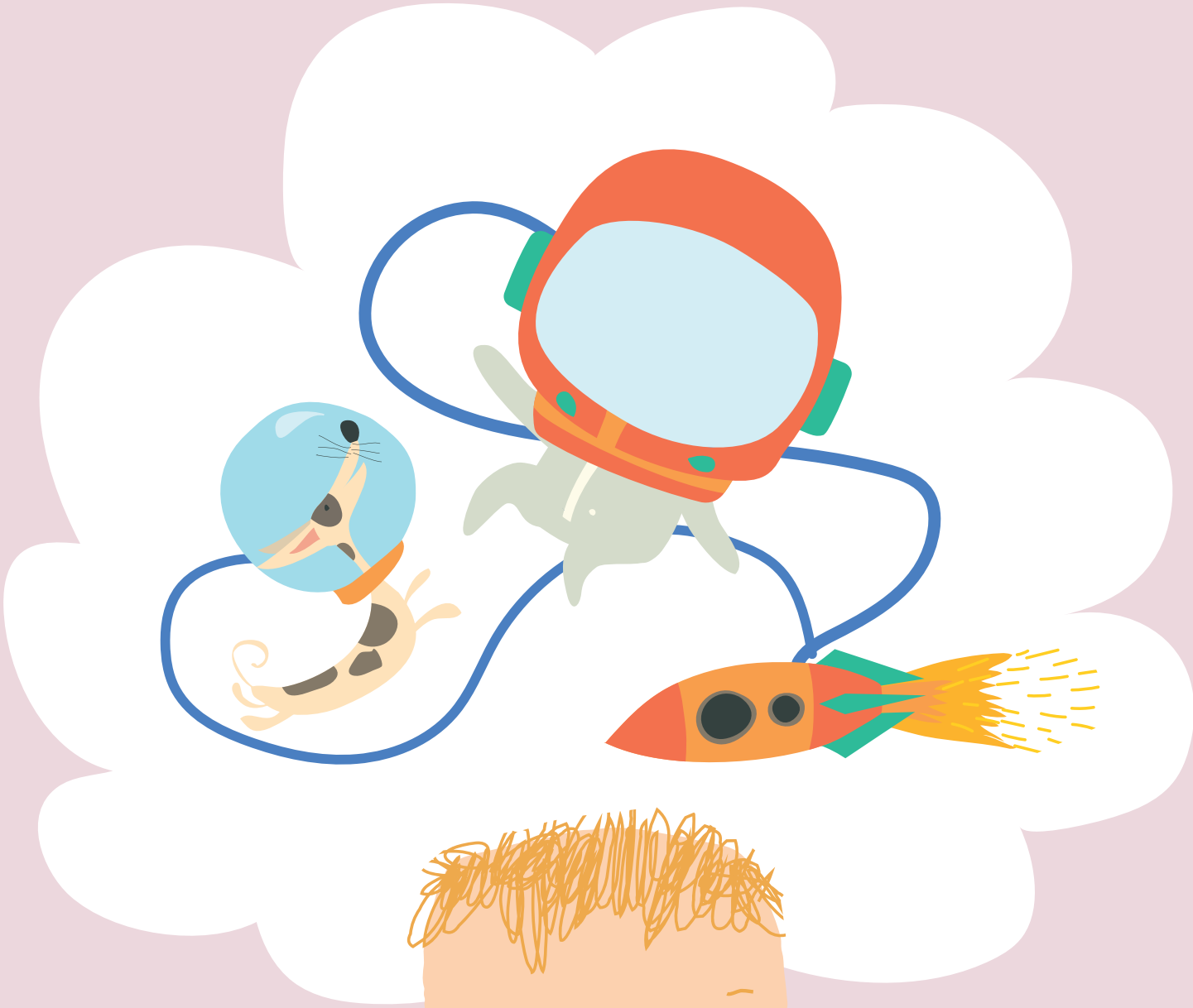
Dr Diane Boyd has worked in HE for the last 18 years. She supported students in understanding child development and teaching experiences with a strong education for sustainability focus. Diane challenged students to become climate activists and empower agency in young children. She was involved with the DfE leading up to COP 26 and was personally invited to the launch of the DfE Sustainability and Climate Change Strategy. Diane has worked with Eco Schools England developing their Early Years platform and resources. Diane is currently promoting early childhood sustainability through the DfE Stronger Hub for the Northwest of England. She is an Honorary Research Fellow at Hull University.



The 100 languages

NO WAY.
THE HUNDRED IS THERE
The child
is made of one hundred.
The child has
a hundred languages
a hundred hands
a hundred thoughts
a hundred ways of thinking
of playing, of speaking.

A hundred always a hundred
ways of listening
of marveling of loving
a hundred joys
for singing and understanding
a hundred worlds
to discover
a hundred worlds
to invent
a hundred worlds
to dream.

The child has
a hundred languages
(and a hundred hundred hundred more)
but they steal ninety-nine.

The school and the culture
separate the head from the body.
They tell the child:
to think without hands
to do without head
to listen and not to speak
to understand without joy
to love and to marvel
only at Easter and Christmas.

They tell the child:
to discover the world already there
and of the hundred
they steal ninety-nine.
They tell the child:
that work and play
reality and fantasy
science and imagination
sky and earth
reason and dream
are things
that do not belong together.

And thus they tell the child
that the hundred is not there.
The child says:
No way. The hundred is there.

by Loris Malaguzzi

The Language of Materials

Creating STREAM environments where children can make discoveries through light and shadow play.

The theories of Piaget, Vygotsky and the work of educational researchers, helps us infer the influence and value of tangible and intangible materials as tools for the acquisition of cognitive functions.

Light and shadow materials used for investigations are a natural source of wonder for young, curious learners who always seem dazzled by this type of play. With careful planning in the environment and creative use of materials, light and shadow play becomes a game for children to explore STREAM (Science, Technology, Reading and writing, Engineering, Arts, Maths) concepts while supporting schemas in early learning.

When offering new open-ended materials, children typically begin the inquiry process by wondering about its use(s). When encountering materials that ignite curiosity, children immediately begin to wonder! Does it make sounds? Does it light-up? What does it do? Throughout the investigation process, their senses become engaged as they use familiar scientific strategies that they have used in prior experiences. At first sight, children need time to explore the materials' physical properties, textures, qualities and features. Just like when a person learns a new language, children go through the same process of learning STEM practices and become more knowledgeable after they are immersed in them (McClure, 2017, as cited in McClure et al., 2017).

For a light and shadow play experience, children must have unrestricted access to natural and artificial light sources such as lamps, torches with colour filter options, Light Up Glow Spheres, Light Up Glow Cylinders, Light Up Glow Bricks, etc. After a variety of experiences with light up tools, young children will not only gain confidence and understanding of the different methods of scientific investigations but will also devise new ways to explore the materials in order to see and understand its cause and effect, and thus its multiple uses (Schaefer, 2016, as cited in Hill, Stremmel, & Fu 2005; Daly & Beloglovsky 2015; Schwall 2015a).

Opportunities for wonder surround us, we just need to pay close attention and notice what is within the environment.

Objects, toys, materials, reflective surfaces—they carry hidden messages that are waiting to be found! When our eyes begin to notice, to see, to wonder about its "other" uses, materials become provocateurs of wonder, tools for scientific inquiry.

You can promote STREAM inquiry skills, including observing, comparing, predicting, testing ideas and reflecting, by presenting materials in new and unexpected ways. This technique will entice curiosity, questions and wonder! According to Vygotsky, the materials that teachers use as instruments for teaching and how they choose to arrange them, can trigger higher levels of mental processes (Schaefer, 2016, as cited in Kozulin et al., 2003).

Using materials in varying ways can open up multiple learning opportunities in young children. (Penfold, 2019, as stated in Lenz Taguchi, 2009 & 2011; Odegard, 2012; Pacini-Ketchabaw et al., 2016). For example, translucent boulders may open up learning around design, arrangement, balance and height through stacking, building and projecting its shadows.

The challenge is: how many ways can the same material be used?

TOOLS TO EXPLORE LIGHT AND SHADOW PLAY

Materials: Torches, colour filters, colour cellophane sheets, translucent blocks, drawing paper, mark making instruments.

Procedure:
Select a book about shadows to read with the children. Have a dialogue about what they know regarding shadows and their experiences with light. Invite the children to explore the materials and remind them not to shine light into their eyes.

Observe and document their comments, observations, questions and ideas. Make sure to give children the time they need to process their thoughts, predictions, and hypotheses. Next, look for ways to test and challenge their theories, help them express their findings and analyse their processes to solve problems through trial and error (Schaefer, 2016, as cited in Clark, 2006).

Ask questions that will prompt multiple answers, i.e.: How are shadows formed? How many coloured shadows can you make? How can you transform the size and the shape of an object's shadow? Don't be shy to use creative and fancy vocabulary! Invite children to investigate the use of their torch by wrapping its light with coloured cellophane sheets using rubber bands. Talk about what the children think makes the torch light up and what they think is inside.

Variations:
Allow younger children to play with turning the torch off and on.

Following Piaget's suggestion that children learn by actively building their own knowledge and creating their own theories, encourage children to plan how to test ideas and make predictions. Provide multiple opportunities for them to co-share their findings and work together on solving problems. Have rulers and other measuring devices available. Encourage creating shadow puppets for storytelling. To document their work, take photos or videos of their investigations and encourage them to draw, write or dictate their thoughts. It is also recommended to use charts and graphs to help children analyse their results.

Providing a creative space for light and shadow exploration gives children a fun way to engage with materials that develop critical thinking skills.

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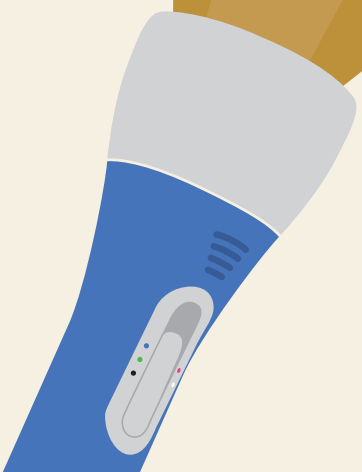

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Paola Lopez is the founder and executive director of Kinderoo Children's Academy located in Ocala, Florida, USA. Her devotion for advocacy, diversity, innovation and alliance for the rights of children— has led her path to a life-long journey of pedagogical research. Her primary goal is to equip teachers and children with skillsets and mindsets that are essential in a world of innovation through the practice of developmentally appropriate practices, documentation, reflection, and transformation.

Let There Be Light

The role of the educator can be described as an attitude to people in general. The pedagogical leadership is about creating something unique in interaction with the people and the conditions we have around us where we are. You need to formulate your pedagogical intention, however, it is not possible to say in advance where the teaching will lead us.

This is a story about a project that was played out during a few winter weeks in northern Sweden. It all began with rhizomatic thinking about teaching where mathematics, language, science and aesthetics grows out of a common democratic process, where learning played out and where democracy as social community is the very foundation.

WE HAD ACQUIRED NEW BLOCKS TO USE OUTDOORS AND WE EXPLORED THESE TOGETHER FOR A FEW WEEKS.

The blocks were red and stackable. Slowly but surely, their qualities began to appear. Someone discovered that they had holes shaped like crosses on all sides. These holes could be seen through. We were looking at each other through the bricks when suddenly one of the children saw the low-lying sun through one of the holes. Here in northern Sweden, it is only bright for a few hours in the middle of the day during winter. The sun does not appear very often and when it does appear, it is just above the treetops in the horizon. When this happens it hits us, often with astonishment, because here in northern Sweden one longs for light all winter.

"The sun is shining in! It is shining in here through the cross in the block and out on the other side", said one child.

Suddenly we all started trying to catch the light through the blocks, but we only had a few hours left as it would soon be dark again.

In the coming days it was overcast, but the fascination in the game of catching the sunlight through the blocks continued to grow. The sun never appeared, and we began to think about how we could continue to capture light through the blocks. We needed to add something to be able to continue exploring further the bricks in relation to light. So flashlights and mini lamps were picked up and placed near the blocks. The mini lamps could light up in several colours. One child in the group stated that the yellow colour closely resembled the sun. We tried the yellow light sources in our block structure and suddenly the light started to shine through the holes in the blocks. Not only did we see the light shining through the holes but also through the block's material, making the light look red.

We began to think about how we could further develop the brilliant construction. Someone had seen a house built of ice and when you lit candles inside it looked like the walls were shining. One of the children suggested that we could freeze our own ice cubes, but it takes some time, and we need to collect boxes that we can freeze the water in. Do we have any other ice-like material that we can use for longer periods of time? We started looking for transparent building materials and found Magnatiles, Glacier Blocks as well as transparent buckets that could be useful. We searched for pictures of illuminated ice buildings to find ideas for our construction, and we found examples from various parts of the world, including from an ice festival in China and the Ice Hotel in Jukkasjärvi, Sweden.

This time we decided to continue the construction in the twilight that appears a couple of hours after lunch to get a greater effect of the light in the constructions by using the natural light shift. A luminous hut became a luminous castle that rose to the sky at dusk. But at the same time everyone tried to be inside the castle and new ideas began to sprout. Next time we will have real ice blocks and build even bigger, so we can all fit together.

About the author: Martina Lundström

Pedagogista, Educational advisor, Author and Social innovator. Currently establishing an Educational centre for pre-school students and teachers, families, and companies in the north of Sweden – @pedagogerian

I see; I reach; I touch; I learn!

Curiosity and engagement are key elements for active learning to take place. Learning needs to involve activity in order for the child to be a full participant in the process. When we are working with very young children, or equally older children with additional needs, the temptation is to control the nature and flow of the learning experience. This produces a 'done to' experience rather than a 'done with' (slightly better) or the ultimate, the 'done by' in which the child initiates, explores and controls any actions.

Instilling such learning opportunities from the earliest ages creates independent learners who will be able to find opportunities everywhere in their geographically-controlled world to intrigue and exploit. The power of such self-directed learning is that skills and understanding move more quickly from working memory to long term memory, and retrieval and generalisation are enhanced.

At every age and stage, but essentially in the early years, children learn more effectively if multiple routes to the brain are engaged, that is if sensory inputs come from one source and combine to provide information to the learning brain. Vision is, apart from children with severe visual impairments, considered to be the coordinating sense. For example, if a child hears an unusual sound, they will instantly turn their head to locate the source of the sound, thus using their vision to make sense of the auditory input. If an item is put into their hands, they will immediately look to see what it is.

So it follows that multisensory work with vision as a key element is needed for every child. However, for those with additional needs these activities are a necessity as they may need multiple repetitions and variations in order to secure the neural pathways which will form a foundation for future learning. From being able to orient to a light source, the child will move on to eye hand coordination when they reach and grasp. All this provides a basis for selection, orientation and manipulation.

When children are very young, providing resources and activities with enticing visuals is a wonderful way to support self–initiated exploration. It is vitally important to push for this independent motivation. Children with additional needs are frequently 'done to', for example, objects may be placed within their reach or in their hand yet the object that interests them is out of reach. It follows that we need to offer visual attraction in tasks that enable the child to locate and interact using free choice.

It is possible to start very simply, for example, just with a torch. Firstly, create a darkened space. This can be as easy as dimming the lights or creating a dark den with a blanket over a table. By shining the torch on objects in a darkened space, visual focus is created on the object and visual clutter created by a busy environment is avoided. If the object is enticing (and for babies and little children nearly everything is!) they will attend to it and then reach. If out of reach, they will move until they can touch and feel it. By tactile exploration and manipulation, including mouthing, the brain receives a huge amount of sensory input to add to that gained through vision.

At this stage it is interesting to note what attracts the baby/child and what is of lesser interest. We can begin to observe preferences at this early stage, and by simply noting these we gather information to help us play effectively with children. We may even begin to note patterns of response which might identify strengths and weaknesses at this stage of the child's development, for example the distance at which they notice an object or the colours that particularly attract them.

There are many well-designed resources that can be used to support this area of learning. As with all resources, there are several key elements to consider. Taking as an example, within the TTS Light and Glow Collection, we can see that a few simple and effective principles underpin this offering.

1. As the title suggests, **Light and Glow resources**, emanate coloured light, which provides a visual attraction to the child.
2. They stand out from many primary targeted resources because they have moved away from the traditional primary colours to visually gentler choices, thus in a busy nursery, playgroup or classroom they 'look' different.
3. Many can be combined to create more interesting combinations, for example the set, Light up Glow Spheres, Cylinders and Bricks, offers so many ways to interact and manipulate the components. The cylinders are perfect for early grasp holds and yet once greater motor control is achieved, they can be manipulated and slotted into the bricks to create new shapes.
4. The Illuminated Glow Roller Shakers add yet another sensory input when being played with; sound. So we have a wonderful combination of sight, sound and movement to feed information to the learning brain. As movement is a key trigger for visual attention, this resource works perfectly for many who are experiencing barriers to smooth visual development.
5. Most impressive is a resource that looks very simple; Glow, Stack & Build Texture Tower and Wooden Pole. There are many stacking resources available on the market but this one has several unique features. Firstly, as already mentioned, the colour choice selection. Secondly, their size; unlike many other such resources they are a good size so encourage two handed manipulation by smaller hands. Moreover, each ring also has it's own texture...this simple addition not only makes it an inclusive resource for a visually impaired child but adds another route to the brain by adding tactile information.

A well-developed resource offers our children so much more in terms of individual, pairs and group work. This is valuable for all children in the very early stages of learning but more so for children with additional needs, for whom it is vital. Their development, and future success is firmly rooted in the provision of effective and empowering activities that support their individual development pathway. It is therefore essential that we carefully curate sensory resources that are flexible, and inclusively designed so that there is clear initial visual stimulus to promote and support active engagement. If the resources also offer longevity they can be used as children get older in slightly different ways, for example pattern matching, sequencing and role play, then they are indeed a treasure. Treasures are not often found and should be shared so that as many children as possible benefit from their magic!

About the author: Carol Allen

Carol Allen is an education advisor for ICT and Inclusion, currently supporting Alton District, Illinois - previously, London Grid for Learning, Hartlepool LA and North Tyneside LA.

Carol is currently a member of the Dept of Education Assistive Technology Expert Group; a BETT Awards Judge and has been a panel member and contributor to sessions at the House of Lords for the APPGAT committee.

Workshop/keynote presentations include FETC and ATIA Florida, Oregon, Indianapolis, Denmark, BETT, Singapore, Rotterdam, Manchester, Geneva, Cologne, London and two five-city conference/workshop tours round Australia in 2018 and 2019.

GLOW
PLAY

The Importance of Glow Play

In recent years, Glow Play has become an increasingly popular way to engage children in meaningful and imaginative learning experiences. The vibrant and mesmerising glow of specially designed resources creates a sensory-rich environment that stimulates children's curiosity and creativity. By incorporating Glow Play into early years settings, educators can provide children with unique opportunities to explore, discover, and grow in a multisensory way.

What Is Glow Play?

Glow Play involves the use of luminescent or glowing materials in activities that encourage exploration, problem-solving, and imagination. These resources, often used in dimly lit or darkened environments, captivate children and draw them into focused and intentional engagement. This type of play is not only fun but also supports various aspects of early development, including sensory processing, fine motor skills, and social interaction.

How Glow Play Benefits Children's Development

Stimulating the Senses

Glow resources such as the TTS Glow Trees are perfect for creating visually stimulating experiences. Children are naturally drawn to the gentle glow, which encourages them to explore small world in an inviting way. Not only this, the trees have a small button on them to press to allow them to change colour. This sensory engagement helps to develop visual perception and focus while creating a sense of wonder.

Encouraging Imagination and Creativity

The open-ended nature of this type of play inspires children to think outside the box. Resources like the TTS Glow People can be used in storytelling, role-playing, or small-world play, allowing children to create their own narratives and scenarios. This kind of imaginative play builds critical thinking skills and enhances language development as children articulate their ideas.

Supporting Social and Emotional Skills

Glow Play often encourages collaborative activities, helping children develop important social skills. When using glow resources such as the TTS Small World Glow Houses, or other glow resources such as glow construction, children can work together to build small communities or enact scenarios, promoting teamwork, communication, and empathy.

Perfect for visually impaired learners

Glow resources are especially valuable for visually impaired learners, as the high-contrast glow enhances visibility and provides a tactile and sensory-rich experience. Glow resources such as the TTS Glow Trees and TTS Glow People allow these children to engage with materials in a way that fosters inclusion, exploration, and independent learning.

Most importantly, incorporating play with glow resources into daily or weekly routines doesn't require a lot of preparation (minus remembering to charge the resources!). Simply create an area in your settings using either a dark space or sensory den. Now, you are ready to Glow and Play!

Play through glow resources is much more than a trendy activity; it's a powerful tool for supporting children's holistic development. Whether used for sensory exploration, imaginative storytelling, or calming mindfulness, glow play opens up a world of possibilities for children to shine—quite literally!

About the author:
Hayley Winter
Early Years Lead and Teacher

Hayley is an Early Years teacher and leader who is passionate about learning through play.

Learning through Light

Resources that Bridge Generations

Planning provocations in an intergenerational care home takes resourcing to a whole new level, Nicole Weinstein discovers as she speaks to educators at The Nursery in Belong.

The garden room at The Nursery in Belong has been transformed into a sensory retreat. Eighty-year-old Oscar climbs into the mini dark den with three-year-old Lucy, while another grandfriend, June, stands inside the pop-up dark den, holding a glow cylinder in each hand.

'People who are living with dementia are drawn to bright, vibrant colours,' explains Sue Egersdorff, co-founder of charity Ready Generations, who set up the Chester-based nursery in partnership with Belong Care Villages. 'They love the glow resources and anything metallic or glittery. They find them mesmerising – and they stimulate their senses, curiosity and creativity in the same way they do for a child,' she adds.

At the intergeneration care home in Chester, where research is embedded into practice, educators are always looking for ways to create meaningful interactions between the children and their grandfriends.

One way is through the resources on offer. 'We look for resources that draw people in and bring them together. They may ignite curiosity which invites them to play, or they may be exploratory, looking at how something works and the cause-and-effect. This often sparks rich conversations around toys and experiences that the grandfriends had in the past,' explains co-founder Liz Ludden.

The TTS Spinning Tops are a great example of comparing items from the past with today. The TTS Giant Light and Sound Spinning Top is an oversized multi-sensory resource that supports collaborative interactions with the two generations, while the Victorian Toy Spinning Top is an historical toy that the grandfriends can relate to.

'Resources like this provide the opportunity to be playful,' Sue explains. 'They are exciting for any age group and the older people are drawn to them.'

Glow Play

Developing relationships is at the heart of the intergenerational offering at Belong care village. The TTS Light Up Tactile Glow Spheres lend themselves to this form of collaborative play.

'Rolling a ball pack and forth to one another is a fun, bonding experience. When the ball lights up, it gifts something else to the users in a playful way,' Sue explains.

But there's another element at play with ball use in an intergenerational setting and 'that's rehabilitation', explains Sue. 'For somebody who may be suffering with an arthritic hand, these textured balls are beautiful to feel. Ball rolling is rehabilitation activity, but rather than using a cheap, nasty ball, if you use a beautiful ball that lights up and shines with different colours, it makes that activity much more dignified.'

Meanwhile, children are captivated by the light up balls, and as they roll them to their grandfriends, they engage their hand-eye coordination, refine their motor skills and support key physical developmental milestones.

Playful interaction with light and shadow is one of the activities available in the Giant Sensory Dark Den with Accessories. In the smaller TTS Pop Up Sensory Space Black, the calming lights stimulate children and older adults' sensory needs. 'We have the TTS Glow Arches which children can stack, tesselate and combine with additional loose part materials,' Liz says.

Using the light up resources in storytelling sessions also creates warm, calming ambiance that evokes cosiness and a sense of belonging.

At Belong, resources are carefully chosen for the longevity and their open endedness. 'We don't have toys; we have items that we describe as provocations for learning'.

About the author: Nicole Weinstein

Nicole is a freelance journalist with over 20 years' experience covering early education and childcare for national publications. She is endlessly curious about the power of play and the environments that help it flourish, often shining a light on the creative, thoughtful practices of early years educators. With an awareness of the importance of the first 1001 days - the critical window when the foundations for health, learning, and wellbeing are laid - she focuses on ideas that support children to thrive.

The Power and Potential of Light Play

By Michelle Reid

As we've discovered, there is something magical about glow and light. **The moment a child spots a flicker of colour or movement from across the room, they're drawn in – eyes wide, curiosity sparked.** It's this natural pull that makes glow resources such a powerful tool in early years settings. But they're more than just lovely to look at. **These twinkling, glowing, captivating resources quietly support so many aspects of a child's development.**

Learning and Development with Glow and Light

Attention and Concentration

Light catches the eye like nothing else. Whether it's the colour shift on the Giant Sound and Light Spinning Top or gentle glow of a Light Up Lantern, glowing resources capture and hold children's attention. For children still learning how to focus, these moments offer intrigue and wonder, helping them to pay attention and practise tuning in. Each time they return to the resource, they're building their ability to concentrate just that little bit longer.

Emotional Regulation

Sometimes, children need a space that helps them feel safe and soothed. A cosy illuminated sensory space can offer just that. The sensory feedback such as the press of a button or a familiar change of colour can give children a sense of control when emotions feel big and overwhelming. For some, watching the lights gently change or tracing shadows with their fingers becomes a calming ritual, a quiet moment to find balance again.

Sensory Exploration

Light and glow resources offer a feast for the senses and can gently awaken a child's sensory system. Whether children are watching lights flicker in the dark, feeling the textured edges on a Glow Disc, or listening to the soft sounds from the Giant Light and Sound Spinning Top, they're learning how to process and respond to different stimuli. For some children, especially those who seek out sensory input, glow resources can be reassuring and engaging. For others, they can offer just the right balance of stimulation and calm.

Communication and Language

Long before children speak their first words, they're communicating. A shared look at a glowing object, a finger pointed as a colour changes, a giggle when lights flash – these are all early steps into the world of language. As children grow, glow resources become brilliant prompts for conversation. They encourage noticing, wondering, comparing and storytelling. Whether it's describing what they see on a light panel or weaving a tale around a shadow created with a light projector, children are naturally drawn into rich language experiences.

Motor Skills

The best kind of motor skill practice doesn't feel like practice at all. Glow resources invite children to twist, press, turn, pour and build – all through play. There's a wide mix to suit every stage of development. Babies might reach for a Light-Up Glow Cylinder; toddlers might thread Glow Discs onto a pole; older children might build a glowing tower or transport the Early Years Projector to explore shadows in a den. Every action, no matter how small, helps to strengthen hands, coordinate movement and build control.

Visual Tracking

Light is brilliant for helping children track movement with their eyes. A glowing ball that rolls across the floor, a spinning top that changes colour, or a pebble that lights up and fades – all encourage children to follow with focus. These small visual journeys are more than just mesmerising to watch; they're helping children develop the tracking skills they'll later use for reading, writing and navigating the world around them.

Cause and Effect

There's a lovely moment when a child presses a button, sees the light change, and realises they made it happen. Cause and effect is a big concept for young children, but glow resources make it wonderfully simple and immediate. With every action and reaction – a tap, a spin, a squeeze – they start to understand that what they do has an impact. It's a gateway into early thinking skills: predicting, testing and wondering 'what if?

Social Skills

Light often draws more than one child to the same space, and that's where the magic of collaboration begins. A shared interest in a glowing resource becomes a reason to take turns, share ideas, build something together, or act out a little story. Whether they're constructing with Glow Bricks or exploring shadows with a friend, children are practising the small social steps that build early friendships.

Memory

Children remember what sparks their interest. A colour sequence repeated on Glow Bricks, a Glowing Arch used to make a pattern, a familiar set of lights used in a calming routine – all of these help children build associations and recall experiences. Glow resources support memory by offering consistency, repetition and sensory richness – and when learning is wrapped in awe and wonder, it tends to stick.

STEAM

Glow and light resources are perfect for early STEAM exploration. As they notice how colours mix, shadows shift, or how different materials behave in the light, they're beginning to think like little scientists and engineers. They might test how to make a tower stable using Light Up Construction Materials, observe how the projectors image changes when an object is moved, use the wall as their canvas for shadow art, or ask questions about why something acts in the way it does. These small moments of wonder encourage children to explore, hypothesise, experiment and create – bringing science, technology, engineering, arts and maths together.

Early Mathematical Thinking

Light and glow resources lend themselves to mathematical thinking in a number of ways. Children might notice patterns in light sequences, sort glowing objects by colour or size, or count how many times the Giant Spinning Top changes colour. They begin to use everyday maths language as they describe what they see – longer, taller, more than, fewer. Building with Glow Construction can be used to introduce concepts like symmetry and balance, while creating sequences encourages children to recognise patterns and helps form the foundations of early algebraic thinking. With the right support, glow and light resources can become a springboard for exploring numbers, shapes, measures and spatial awareness – all in a way that is meaningful and memorable.

About the author: Michelle Reid

Michelle has worked in education for over 20 years. She started her early career as an Early Years Practitioner working in a private day care setting before training to become a Primary School Teacher. She has had a variety of roles including a senior leader in a primary school, curriculum leader, school governor and has also worked alongside the Local Authority.

Light and Dark!

The importance of light in our learning spaces

Setting Up Our Learning Spaces

When we set up spaces in our classrooms and settings, we consider furniture layouts, wall displays, storage and resources. The care with which we arrange and organise the components help us to create a learning environment which will support learning, activities and the needs of our children.

However, there are some basic, sensory features which create extremely influential aspects to the effectiveness of our settings and classrooms, for example, light, sound and smell. If your room is located near the dining hall or kitchen, the wafting smells at lunchtime frequently cause hungry children to lose focus!

The Influence of Light in Our Settings and Classrooms

The influence of light in our settings and classrooms is extremely important. Having good natural light is beneficial, but being able to control that light, for example, to avoid glare and unwanted reflection, is vital. Electrical lighting should be chosen with care; many older 'strip' lights flicker and buzz for children with specific sensory needs and thus cause major distraction from the allocated learning task. A simple exercise is to sit in every seat or bend down low in each area of learning and look at focal points, for example, resources that the children may need to access, each individual learning space, or for older children, the whiteboard or the teacher's desk. Are these visually accessible? If not – time to make changes.

Creating a Calming Space

The ability to control the light level is also useful for reducing sensory input, perhaps at times for quieter activities or when calm regulation is needed. To create a calming atmosphere, perhaps try dimming lights or introducing colour washes as these can totally change the energy dynamic, perfect for decreasing dysregulated behaviours or supporting contemplation. You may have the ability to black out window light with effective blinds; perhaps you have a dimmer switch for finer control of overhead lights, but if not consider creating areas where you can have control over light sources and levels.

Dark dens that are easy to put up and safety tested can be purchased. These allow you to create specific areas in which visual activities can be optimally offered. In addition to enhancing light sources, their size offers a 'safe space' so the combination of enclosure and controlled light can create powerful emotional support.

Adding Glow Resources and Light to Your Space for Sensory Input

Combining the dark dens with other carefully chosen resources will increase the levels of sensory input for your children, along with the range of learning opportunities on offer. The whole of the 'Glow' range offers a wide variety of visually focussed resources which when combined with their other engaging features, for example, manipulation; motor skills; tactile work; construction, they support a variety of creative, sensory activities which really achieve optimum results in a low light environment. Consider things such as, 'Are the resources rechargeable?' so that there are no wires to get in the way of interactions.

Several of the Glow resources have integrated tactile elements. An example are the Stacking Glow and Texture Discs. These are just one choice in the range that offer a defined tactile experience which, in a low lighting environment, is enhanced and thus the sensory connections to the brain are strengthened

Adding Other Sensory Resources to the Space

Weighted resources are a wonderful addition to dark dens for many children. They have direct 'calming' and regulatory benefits. However, for many this also increases focus on other tasks so having them available can support an accessible and productive session of interaction. Equally, adding vibrating resources to the den such as cushions or vibrating lap buddies increases the potential sensory input for children. Having a variety of resources allows learners to experiment and choose what works best for them. We are multisensory beings so although we may wish to concentrate on visual work, encompassing other sensory needs can support our outcomes.

Even smaller spaces can be created for visual work, particularly engagement and focus by using umbrellas to create temporary, personal work areas to 'contain' the resources being used, and thus increase focus.

Whatever you are able to offer, the impact will provide the building blocks for later learning. For example, strong visual focus and tracking supports reading and writing. Exploration and experimentation are the foundations of Science and Maths and of course, learning to self-regulate and attend to our sensory needs and preferences, supports all learning, and life. Take a moment, assess what you offer now; consider what you could add to your provision and create a strong visual focus!

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Carol Allen is an education advisor for ICT and Inclusion, currently supporting Alton District, Illinois - previously, London Grid for Learning, Hartlepool LA and North Tyneside LA.

Carol is currently a member of the Dept of Education Assistive Technology Expert Group; a BETT Awards Judge and has been a panel member and contributor to sessions at the House of Lords for the APPGAT committee.

Workshop/keynote presentations include FETC and ATIA Florida, Oregon, Indianapolis, Denmark, BETT, Singapore, Rotterdam, Manchester, Geneva, Cologne, London and two five-city conference/workshop tours round Australia in 2018 and 2019.

PART 2

BRINGING LIGHT INTO YOUR SETTING

Adding a Glow to Your Provision

A few things to consider

Before introducing light and glow resources into your setting, it's helpful to take a moment to consider a few things that can make them even more effective for both you and the children. Here are a few things to consider:

Choosing The Right Space

You don't need a full sensory or dark room to get started with glow resources. It's more about being creative with the space you've got. Light and glow resources can be used in different spaces, even those with some natural light, but if you want to really make the glow stand out, here are a few ideas to try:

Dark dens or pop-up tents
These are easy to set up and portable so easy to move around. They are great for blocking out the light in a bright setting and they give children a calm space to explore and experiment.

Homemade dens
Get children involved in building a makeshift den for their glow play (all part of the fun!). Pegging blankets over tables or across a quiet corner of the room can create brilliant glow spaces. Not only are these dens perfect for using glow resources but also give children the chance to get involved in the setup, making it all part of the learning experience.

On or under a tuff tray
Drape a dark cloth over the tuff tray to make a glow cave underneath or use the tray itself for a self-contained small world scene with light and glow elements.

Cardboard glow theatre
Get creative with the children by transforming a cardboard box into a glow stage or mini theatre. Simply turn it on its side, cut out a few windows, and let children shine torches or lights through to create their own magical light displays or glow scenes. A blanket can be draped over the top to make it even darker inside (like an old-style camera), turning it into their very own enclosed storytelling space.

When using light or glow resources, think about:

- Can children access them independently?
- Is the space dark enough to make the glow really stand out?
- Does it feel inviting?

Inclusion – Make Learning with Light Accessible for Everyone

For many children, light up resources are exciting and engaging, but not every child will respond to them in the same way. While some children will be drawn straight to the light effects, others might prefer more subtle glow resources or may need time to get used to these new sensory experiences. This is where your knowledge of the children really comes into play.

A few things to consider:

- Create different types of glow environments based on your children's needs. For example, for those children who may feel overwhelmed by too much sensory input, you may start by adding just one or two gentle glow resources in a calm, quiet space. For those who seek out more stimulating sensory play, create a more interactive experience with resources that spin, flash, change colour or make a sound.
- Support children who prefer to watch before joining in by creating spaces where they can observe others using glow resources at their own pace.
- Allow children to choose what they engage with and how.

Something for everyone

The more varied your resources, the more opportunities children have to explore and engage in ways that suit their interests and needs. Think about including a mix that encourages different types of play. Here are a few examples:

- For children who like to move around, handheld resources such as torches, glow cylinders, or the Early Years Projector enable them to explore light through movement and action.
- For those who enjoy building and creating, resources like glow construction bricks, crosses, arches, cylinders, people and trees add a magical twist to construction and small world play.
- For sensory seekers, try glow rollers, spinning tops, or resources that involve, touch, movement and sound. These are great for investigating cause and effect.
- For children drawn to patterns and repeated actions, include stackable, twistable or rotating glow resources that support schematic play such as rotation, trajectory or connecting.

Making Light and Glow Part of your Everyday Provision

With some careful planning, light and glow resources can become a manageable and valuable part of your everyday provision. Take time to think about where they will go, how children will access them, and how they will be used in your setting:

Ask yourself:

- Do the resources link to the children's interests?
- Can they be used for more than one type of play?
- Are they easy for the children to get out, use and put away?
- Is there space to charge them when needed?

When thoughtfully introduced, glow resources can enrich your environments in meaningful ways. They can help create calming spaces for regulation, spark curiosity, and support a wide range of learning – whether it's storytelling, exploring cause and effect, investigating scientific concepts, or simply offering a quiet moment of focus. It's about finding out what works for the children in your setting, and using light as another tool for play, discovery, engagement and learning.

Safety First

Light up and glow resources are great but it's important to check that they are tested to use with young children. Here's a quick checklist:

Choose resources that are tested

Are the Glow resources tested for children and age appropriate?

Check the temperature

Do light/glow resources such as projectors stay cool to the touch?

Consider hazards

Where possible, opt for wireless, battery operated or rechargeable resources to avoid trailing leads and trip risks.

Ensure the brightness is appropriate

Are the lights gentle on eyes? Strong lights can be dangerous and harsh, so check that any glow or light resources use child safe levels of brightness (lumen levels).

At TTS, we take safety seriously. All our resources are risk assessed and tested to recognised UK and EU safety standards. These are then backed up by the TTS Fit for Purpose Programme which ensures the products we create are fit for the environment in which they are used.

GLOW UP
SMALL WORLD PLAY

Your Top 5 Resources

Glow Trees **EL46410**

Power & Potential of Glow Small World

Bringing light into small world play ...

- Offers children more choices and opportunities to be creative in their play by also deciding the colours of their landscapes and characters.
- Adds atmosphere, and awe and wonder to storytelling.
- Encourages experimentation and exploration with shadows.
- Supports learning about seasons and weather.
- Facilitates discussions around feelings and emotions.

Glow People **EL46409**

Glow Houses **EL11353**

Rainbow Glow Arches **EL45134**

Rechargeable ICT Glow Mountain **EY07204**

Top Tips and Ideas for Bringing Light into Small World Play

- Use glow resources alongside other materials such as wooden small world characters, mirrored pebbles, iridescent boulders, shimmering fabric, vehicles or natural loose parts.
- Why not create special, slightly darker spaces for your glow small world play. This could be a homemade den (maybe underneath a tuff tray), a large open-top box, a pop-up tent, or a darkened corner or room.
- Combine different glow resources to create larger small world scenes, such as an illuminated cityscape sitting under an immersive (projector) night sky with glowing cylinder skyscrapers, rainbow bridges, tunnels, bright houses and buildings.
- Use visual prompts, such as books or images to inspire or support understanding.
- Use recordable resources to offer inspiration and provocation about how and what may light up or glow.
- Give opportunities to experiment, explore and be curious through child-led play.
- Use the glow resources to introduce and support discussions and learning opportunities, such as the changing colours of the seasons, or the feelings of characters in stories.
- Model and wonder alongside the children about how their small world play changes as the resources light up or change colour. What difference does this make to their play?
- Use light to create shadow small world play.

Build Your Own Small World

Key Skills Development

- **Imaginative play and storytelling**
- **Colour exploration and creative expression**
- **Decision making**

Language Opportunities

- Story sequencing
- Descriptive language
- Explaining their choices and answering questions

Activity

Encourage children to build their own small world using glow resources such as people, trees, houses, a glow mountain, and rainbow arches, alongside other small world props. They may choose to change colours to represent different characters, seasons, or places. What will the rainbow arches become – a secret tunnel to the mountain, a bridge, a hill, or an enchanted rainbow? As they play, observe how children begin to weave stories, explain who lives there, describe their ever-changing adventures, and wonder aloud why all the trees have turned red.

Extend

Add natural materials like stones, leaves or fabrics to enhance the landscape and inspire new story ideas. Introduce the glow resources in a darkened space to deepen sensory engagement and encourage new narratives.

Adapt

Offer fewer items or add to them over time. Use colour prompts, familiar story books, or simple questions to support communication and spark ideas.

Glow in Action

"We wanted to incorporate glow into our small world play because the glow and light up elements add an extra layer of sensory stimulation, creating an immersive environment that engages multiple senses. We also wanted to appeal to children who wouldn't necessarily gravitate to the small world resources but were fascinated by technology. The Glow Small World resources opened up this type of play for a wider range of children."

Nursery Manager Woodlands Nursery and Forest School

Storytime Emotions

Key Skills Development

- **Emotional awareness and empathy**
- **Colour recognition and symbolic thinking**
- **Understanding characters in stories**

Language Opportunities

- Naming and describing feelings
- Explaining their thoughts – e.g. 'He's blue because he's frightened'
- Talking about characters motivations, moods and actions

Activity

Encourage children to explore different moods and feelings of the **Glow People** (characters) in their small world play. Invite them to choose colours to represent different emotions -these may vary for each child. For example, a character who is walking through a scary forest may turn red to show they are scared.

A great way to introduce this is to begin with games where children match the colour of a glow person to feeling cards or facial expressions. As they become more confident, children will be able to independently link this to their small world play or stories.

While reading a story aloud or acting it out, pause and ask children to change the colour of their glow person to show how a character might be feeling. How do their feelings change throughout the story?

Extend

Use mirrors to help children explore their own facial expressions. Introduce more complex emotions as they grow in confidence. Link this to characters they meet in stories.

Adapt

Begin by exploring fewer emotions linked to colour and introduce new emotions gradually. Model how characters emotions change throughout a familiar story to support understanding.

Glow in Action

"Play through glow resources is much more than a trendy activity; it's a powerful tool for supporting children's holistic development. Whether used for sensory exploration, imaginative storytelling, or calming mindfulness, glow play opens up a world of possibilities for children to shine—quite literally!"

Hayley Winter Early Years Teacher and Leader

What's the Weather

Key Skills Development

- **Understanding the world through weather exploration**
- **Creative scene building and imaginative play**
- **Cause and effect thinking and prediction**

Language Opportunities

- Using descriptive language and weather-related vocabulary
- Describing changes
- Storytelling around weather events

Activity

Use **Glow Houses, People, Trees and Rainbow Arches** to help children explore different types of weather. Ask: 'What colour do you think represents a snowy day?', or 'How would it look if it was really sunny?'

Children can change the colour of their resources to represent rain, fog, sunshine or snow, and use props like cotton wool for clouds or blue fabric for water.

Extend

Add weather sound effects, play weather-related music or use an Immersive Projector to create an immersive environment to inspire movement and storytelling.

Adapt

Focus on one type of weather and build it together, modelling language as you go. Do this activity after children have been outside playing in the rain or after a warm, sunny day so that they have recent first-hand experiences before bringing it into their play.

All Kinds of Families

Key Skills Development

- **Understanding similarities and differences**
- **Exploring family structures and who we are**
- **Sorting and classifying objects by more than one feature/attribute**

Language Opportunities

- Using language of comparison – same, different, bigger, smaller
- Naming relationships and roles – parent, carer, sibling, friend, grandparent etc
- Age-appropriate discussions about diversity and inclusion

Activity

Use the **Glow People and Houses** to explore similarities and differences in a gentle, inclusive way. Invite children to change the colours and group the figures. 'Which ones are different?' 'Which ones are the same?'

They might sort by size, colour or a combination of both – same size but different colours, same colours but different size or all the same/different. Encourage children to talk about who the figures could be in their family – there might be two big people and three small ones, or a group where everyone is different. Emphasise that families and the places we live can look different and that it is important to celebrate everyone for who they are, regardless of differences.

Extend

Invite children to create their very own 'Glow Family' that represents either people in their own lives or a made-up story. They can name each character, talk about who they are and what makes them special. Add props like fabric, small furniture or drawings to create homes and shared spaces for the families.

Adapt

For younger children or those needing more support, offer fewer figures to play with at a time. Model the language of same and different. Use simple prompts or ask questions so that the children can answer in actions e.g. 'Which one is bigger?' or 'Can you find two the same?' This will support children to develop and understand language of comparison and sorting skills.

Glow in Action

"All the glow resources are magical including Glow Small World. I really like the way technology has been combined with a small world resource giving an additional dimension to them. I particularly like the trees as they can support with knowledge and understanding of the seasons and colours. Using these inside a dark den or sensory room would show the full effect of the magical glow these resources give off."

Shardi Vaziri
Early Years Advisor and Teacher

Glow in Action

"The light-up aspect of the Glow Small World resources really captures the children's attention. We often set it up in a darker area or pop it inside a dark den, and that little bit of glow changes the whole feel of the play. It's calm, inviting, and something a bit different. Even children who usually head straight for blocks or other activities are drawn in when they spot the glowing shapes. Because the set includes familiar items — like houses, trees, and people — the children connect with it straight away. But what makes it even more interesting is that they can change the colours. It's such a small detail but makes such a difference as it gives them a sense of ownership. We've seen children change the colours of the people and trees, they come up with all kinds of stories and ideas which is enhanced by the press of a button to change the colour."

Early Years Teacher Dukes and Duchesses Nursery

GLOW UP
CONSTRUCTION

Your Top 5 Resources

Glow Crosses Large 12pk
EL45131

Power & Potential of Glow Construction

Bringing light into construction ...

- Gives children the freedom to be more creative in their building by selecting different shapes, colours, and ways of fitting them together.
- Supports early STEAM thinking and exploration of patterns, space and structure with an element of technology involved.
- Adds excitement, challenge and a fresh sense of wonder to construction.
- The sensory element attracts some children who might not usually choose construction play.
- Opens up opportunities for exploring a range of maths concepts such as counting, spatial awareness, 2D and 3D shape, symmetry and space. All through hands on play.

Light Up Glow Construction Bricks **EL46409**

Glow Arches 12pk **EL11340**

Glow Cylinders and Connector Bundle **EL46706**

Stack and Build Glow Blocks **EY11702**

Top Tips and Ideas for Bringing Light into Construction

- Add glowing building pieces into your existing block or construction area to spark excitement. Introducing colour, light, interesting shapes and a subtle hint of technology can enhance play even further.
- Combine glow construction with other materials such as wooden blocks, glacier bricks, magnetic blocks, iridescent boulders, radiant arches, wooden reels and metallic pieces such as zig zags and pebbles. Children will not only explore and experiment with different materials in their creations but also have a greater variety of resources to construct with.
- Create a dimmer, darker building zone or use glow construction in a darker corner to help the light effects really stand out.
- Offer a mix of regular and irregular shapes to build with. This sparks curiosity, challenges thinking and builds resilience. After all, balancing arches and crosses often takes more skill than stacking regular shaped bricks.
- Encourage collaborative builds where children need to make joint decisions about how their structures will look and which parts will light up.
- Use recordable devices to give children simple construction challenges or story starters that involve building with glow construction.
- Provide books and visuals showing different constructions and buildings from around the world. This helps to extend children's knowledge whilst giving inspiration to those who need a little support to get started.
- Offer mini caddies filled with pens, pencils, paper and tape measures to encourage them to draw, design and label their plans. Take it further by adding recordable clipboards or illuminated mark making boards, bringing another multi-sensory dimension into their play.
- Enhance play in the construction area by adding role play props like hard hats, high vis vests and pretend tools to help children step into the role of builders, engineers and designers.
- Link construction to imaginative worlds. Can the children build homes for glow people or their favourite story characters? They might create a dazzling cityscape where superheroes battle villains or build houses from different materials to keep the Three Little Pigs safe from The Big Bad Wolf'.

Building Foundations - Shake, Stack and Explore

Key Skills Development

- **Physical development – reaching, crawling, grasping, threading, and balancing**
- **Cause and effect**
- **Maths – concepts such as size, height, pattern and order**

Language Opportunities

- Naming colours
- Descriptive language
- Exploring action words – shake, stack, roll, slide, balance and wobble

Activity

Introduce children to the **Glow Discs** by giving the discs a gentle shake to make them light up. Once glowing, lay them just out of reach. Encourage children to indicate which one they want. This could be by pointing, reaching or vocalising. For younger children, model simple language, 'You would like the purple one,' while inviting them to crawl, shuffle or toddle towards it. Once they retrieve a disc, show them how to reactivate the disc by shaking it.

Extend

Challenge the children to build a free-standing structure using only the discs – no pole. Children might experiment with balancing some on their edges too. Once children are confident, try adding more types of glow construction such as **Glow Pebbles, Bricks, Blocks, Arches** or **Glow Crosses** so that they can experiment with more complex balancing and stacking.

Adapt

For babies and children with limited mobility or motor control, offer fewer discs or place within reach, supporting and encouraging them to retrieve them and explore.

Use a tray or mirrored surface to make the lights even more engaging and easier to access. Hide the discs and encourage the child to use the colour name to request it.

Glow in Action

"The glow resources really enhanced our construction provision. The light up nature of the resources definitely increased the children's engagement in the building activities and sparked their imaginations to create a range of exciting and creative models. The buildings they created seemed to have a magical feel. It would be particularly beneficial to use the resource when teaching about festivals e.g. Diwali or Christmas to support storytelling and small world play."

Early Years Teacher Brampton Primary School

Can You Build What I Build?

Key Skills Development

- **Giving and following of instructions**
- **Turn-taking and teamwork**
- **Spatial awareness, sequencing and symmetry**

Language Opportunities

- Descriptive vocabulary
- Prepositional language – next to, on top of, underneath, in the middle
- Reasoning language, 'I chose this one because....

Activity

Pair children up or split them into small teams. Create two building spaces with a makeshift divider between them (this could be cardboard boxes or material draped over chairs). Provide both children/ teams with the same selection of glow construction resources (alongside other types of existing construction materials). These could include **Glow Bricks, Cylinders and Connectors, Glow Arches and Crosses**.

One team becomes the 'Builder(s)' and the other the 'Copier(s)'. The builders create a structure, either stacked vertically or laid out on the floor. Whilst doing so, they give clear instructions on which construction piece they are using, what colour it is, and how it's positioned. Once both teams have finished, remove the divider and compare.

Extend

Invite children to swap roles and rebuild more complex structures with more detailed instructions, Children could also start to change some of the colours for added complexity.
Introduce a third role – an 'observer' who checks accuracy and gives constructive feedback or support to each of the teams.

Adapt

For younger children, an adult can model being the 'builder' while the children copy. Use simple, clear instructions paired with visual cues such as pointing. Keep constructions small to avoid overwhelm and frustration.

Glow in Action

"Child A began by experimenting with the glow bricks, stacking them in various ways. Initially, the child showed an interest in balancing bricks on top of one another, creating towers. Over time, Child A added arches and crosses to the structure, experimenting with their placement and purpose. She used the cylinders and connectors to stabilise the arches and bricks. This led to a simple structure resembling a bridge or gateway, which Child A found intriguing. They revisited their play over several days."

Nursery Manager Woodlands Forest School and Nursery

Little Architects and Engineers

Key Skills Development

- **Planning, evaluating and constructing through play**
- **Maths - exploring shape, pattern, symmetry, and stability**
- **Learning through trial and error - building resilience**

Language Opportunities

- Action words – stack, rotate, connect, assemble, manoeuvre
- Descriptive words – tall, wide, narrow, strong, stable, curved
- Subject specific words – plan, design, adjust, test, improve

Activity

Invite children to become architects and engineers. Provide a variety of glow construction resources (all with different features) alongside existing construction materials and images of different buildings etc. Add paper, clipboards, or illuminated mark making boards for children to draw up their plans. Encourage them to think like designers:

- What shapes and patterns will they use in their structures?
- How will they stabilise it? Can they reinforce it by slotting **Glow Cylinders** into the holes of the **Bricks**?
- Can any parts move? Could they create a piece that spins, swings, or pivots?
- Will they change the colour of any of the glow materials to represent the different parts of the structure (e.g. yellow for windows, red hazard warning lights on top of tall buildings).

Throughout the activity, explain, model and encourage the use of descriptive vocabulary during both the planning and building stages.

Extend

Challenge children to use specific vocabulary in their explanations, e.g. 'Can you describe how you manoeuvred the piece into place'? Add different shaped construction materials for more complex creations.

Adapt

Offer simplified vocabulary and sentence starters for children who are just beginning to explore language related to construction. Provide some visual prompts for children who need support with ideas.

Glow in Action

*"Children constructed, deconstructed and experimented with light and shadow as their creations evolved. Whilst the younger children spent time working on developing their hand-eye coordination by slotting the **Glow Cylinders** into the bricks; the older children used their critical thinking skills to quickly figure out how placing the cylinders in the bricks made their towers more stable.*

Whilst independently exploring the glow construction, the children displayed curiosity and used a range of investigative techniques to decide what to do with them. This then led the children to use a range of vocabulary and develop their communication skills. Vocabulary that we heard during their play included, 'stack', 'build', 'tall', 'taller', 'bigger', 'glow' and 'light'."

Teacher Clarendon Primary School

*"The implementation of the Glow Construction such as the **Light-Up Glow Spheres, Cylinders, and Bricks** at TFTF Tots proved to be highly beneficial in supporting speech and language development, understanding of technology, and imaginative thinking among the children. The free play approach allowed the children to follow their own ideas and explore the various possibilities offered by the resources. Through activities such as building structures, colour recognition, and technology exploration, the children developed their critical thinking, problem-solving, and speech and language skills."*

Nursery Manager TFTF Tots Nursery

Shape Makers – Visualising and Building with Glow

Key Skills Development

- **Exploring and recognising shapes and properties – 2D and 3D**
- **Fine motor skills**
- **Visualising and exploring how parts fit together**

Language Opportunities

- Mathematical language – sides, corner, edge, flat, shape names
- Language of comparison – longer than, has more corners
- Descriptive vocabulary – straight, curved, equal, longer

Activity

Ask, 'What shapes do we know, and can we build them, so they glow'? Lay out a selection of **Glow Cylinders, Connectors**, and other glow construction for the children to explore. Model how to create a 2D shape like a square by connecting four glow cylinders with connectors at the corners, or a circle by joining two **Glow Arches**. Talk aloud as you build – 'We need four sides. Let's connect them at the corners. How many corners can you see?' Support children to make and name their own shapes, focusing on sides and corners. Have visuals available to guide independent exploration. When ready, introduce the idea of building 3D shapes like cubes. Help children to visualise how shapes fit together to make a 3D shape.

Extend

Challenge confident builders and mathematicians to create their own 3D models – can they build a cuboid or even a glowing rocket made from shapes? Which shapes they have used and why?

Adapt

For younger children or those still developing shape awareness, focus on one shape at a time. Offer visuals with shapes on or other shape resources for them to copy and reinforce vocabulary through repetition.

GLOW UP

SAND, WATER AND MESSY PLAY

Your Top 5 Resources

Light Up Collectors Buckets
EY11868

Power & Potential of Glow Sand, Water and Messy Play

Bringing light into sand, water and messy play ...

- Adds a twist to familiar resources such as sand, water and messy play materials.
- Encourages children to notice changes and make observations. They will see how light reflects, shines through or changes the different materials and media used.
- Invites children to be curious and express their creativity in different ways.
- Attracts children who may not usually choose sand, water or messy play, offering a fresh sensory invitation.
- Helps create calming, focussed play moments as children watch light dance through water or shine through paint.

Easi-Detectors – Metal Detectors and Magnifier
EL47411

TTS Colour Changing Light Panels
SC10095 & SC10096 (different size options available)

Acrylic Creative Frame
EY05348

Immersive Projector
EY11864

Top Tips and Ideas for Bringing Light into Sand, Water and Messy Play

- Use glow and light alongside other resources in your sand, water or messy play areas to enhance play and encourage curiosity.
- Take waterproof light up resources such as Light Up Lanterns and Light Up Collectors Buckets outside on dark, rainy days. Children can watch the lights reflect and shine in the puddles, or use the rainwater they collect in the buckets mixed with powder paint to create puddle paint palettes that they can run through or splash in to create outdoor art.
- Use Light Up Buckets for children to fill and empty in your sand and water areas. What do they notice as they add or remove things from the buckets?
- Explore textured glow resources such as Glow Discs, Spheres or the Light Up Buckets and make patterns in dry materials such as playdough. Please note that you will need to securely cover the charging points with tape before doing so.
- Place Easi-Detectors into your outdoor or sand areas. Children can hunt for hidden treasure and see the detector light up when they find metal. Great for teaching children about the properties of materials.
- Experiment with different messy play materials on a messy play protective cover on your light panel – playdough, slime, coloured sand, paint or foam. How does the light change the appearance of some of the materials?
- Explore different techniques on the protective cover over the light panel. Techniques could include marbling, finger painting or bubble painting.
- Set up different 'canvases' around your immersive projector. Examples include:
  - Sticking large paper on the walls for children to draw around shadows and to create patterns
  - Using Acrylic Creative Frames for them to paint on and hold up to the light
  - Providing baskets of materials (transparent, translucent or opaque) for building light-inspired sculptures and to use in their creations.
- Create sensory experiences by using sand, water and messy play materials in darkened spaces with light resources. Children can see, feel and explore textures in a new way using different senses.

Treasure Detectives

Key Skills Development

- **Exploring how technology can be used**
- **Motor skills – digging, sweeping, picking up and examining small items**
- **Science - sorting and classifying objects by their properties**

Language Opportunities

- Scientific/technical language – detect, metal, material, magnetic, vibrate, sensor
- Descriptive discovery words – hidden, buried, shiny, clue, secret, find
- Prediction and reasoning – 'Why did the detector light up?' 'I think it will be...'

Activity

Take the **TTS Easi-Detectors** into the outdoor provision or use them in a large sand or soil tray indoors. Bury a selection of small 'treasures' such as metal coins, magnetic letters or interesting metallic objects under the surface. Demonstrate how to switch the detector to the preferred setting – it can light up, beep, vibrate, or do all three when the treasure (metal) is found. Talk to the children about which setting they like best. Some children may prefer a silent vibration whilst others may enjoy the excitement of sound and light.

Encourage the children to sweep the detector over the sand or soil, watching and listening for clues that they've found a hidden object. Support them to gently dig and discover what's buried, describing what they find as they go. Children may wish to collect their findings in the **Light Up Collectors Bucket**.

Extend

Set up a themed adventure, for example, a 'Pirate Treasure Hunt' or 'Dinosaur Dig'. Mark out a larger digging site with ropes, cones or blankets to create a hidden temple or cave. Create a treasure map on an Illumi Board for the children to follow and provide a range of tools for the children to use such as spoons, sieves, trowels and torches.

Adapt

For children who prefer less sensory stimulation, use just the light setting with the vibration and sound turned off. Start with treasures placed just beneath the surface to build confidence and technique before burying them deeper.

Immersive Art Gallery

Key Skills Development

- **Creativity and self-expression**
- **Learning about the properties of different materials**
- **Using and evaluating a range of artistic techniques and methods**

Language Opportunities

- Language related to prediction and observation
- Describing textures and materials – transparent, smooth, rough, opaque
- Giving opinions and reasons

Glow in Action

"The Immersive Projector is a resource that provides excellent benefits for visual stimulation and the development of the cognitive area, leading children to make innumerable connections and observable mental processes through the creativity expressed in their configuration of play."

Paola Lopez Founder and Executive Director at Kinderoo Children's Academy, Inc

Activity

Transform a space into an immersive art gallery using an **Immersive Projector**. Hang hula hoops (various sizes) wrapped tightly in clingfilm from the ceiling or stands. These act as see-through canvases. Children can paint directly onto the clingfilm, watching how their artwork is projected onto the surrounding walls and surfaces.

Experiment by adding different materials between the clingfilm layers e.g. coloured acetate, leaves or feathers. Observe how the colours and textures change the projected patterns.

Fix large sheets of paper to nearby walls so children can draw or paint around the shadows and shapes that appear. Provide chalk markers so they can draw directly onto the projector's surface to create bold patterns and designs.

Extend

Photograph the immersive gallery and invite children to give a 'tour' to their friends or families, describing what they created and how it changed when projected.

You could also play music to match the moving artwork, turning the space into a truly immersive experience.

Adapt

For children who prefer not to use paint, offer dry materials like tissue paper or acetate sheets to attach between the clingfilm layers. Place the hoops at different levels so they are accessible to all or use Acrylic Creative Frames that can be painted upon before being held up to the light.

Buckets of Discovery

Key Skills Development

- **Cause and effect**
- **Scientific concepts – light, reflection, materials**
- **Motor skills development as the children pour, tip and carry the buckets**

Language Opportunities

- Action words (verbs) – pour, tip, scoop, lift, stack, roll, spill, press
- Scientific vocabulary – reflect, transparent, flow, surface, absorb
- Mathematical language – full, empty, heavier, lighter, more, less, deeper

Activity

In your sand and water areas (indoors and outdoors), offer the children the **TTS Light-Up Collector's Buckets**. Show them how the buckets light up when they add or remove materials such as water, sand, pebbles or shells. Encourage them to experiment – 'What happens when you pour water in?', 'What happens if you tip sand out?'

Puddle Play – on a dark, rainy day, take children outside with the buckets. Ask children to explore collecting rain and placing the buckets in puddles. Allow time for them to see how the glow of the bucket reflects in the puddles. This leads to conversations about light, shadow, movement and colour.

Extend

Create a sensory water area that includes the buckets, water, bubbles, scents and a range of tools and materials to use alongside.

Can the children think of different ways to use the buckets? Stacking to create a tower, rolling to make a mark/pattern or counting objects as they land in the bucket.

Adapt

Offer a range of other tools alongside the buckets such as sieves, scoops, vessels and spoons so children can transport materials in different ways.

For those who find the tipping or lifting of the buckets tricky, place the buckets on a low tray so they can empty and fill the buckets using scoops or cups instead.

Shining a Light on Messy Play

Key Skills Development

- **Exploring and mixing colours in new ways (creativity)**
- **Motor skills**
- **Cause and effect – light and colour changes**

Language Opportunities

- Vocabulary related to colour
- Prediction language – 'I think...', 'What will happen if...'
- Descriptive language- related to textures and different effects

Activity

Set up a **Light Panel** with a messy play protective cover securely on top. Place a sheet of white paper next to the panel as a comparison. Offer children a choice of coloured paints and encourage them to name the colour before painting it on to the paper.

Next, invite them to paint directly onto the messy play cover over the light panel. Try adding another colour, layering and mixing on both the paper and the cover. Does the colour look the same on the paper and the cover? How are they the same/different? Encourage them to mix two colours together. Can they predict the colour they might create?

Extend

Take photos of the different colour combinations and techniques used. Display them near the light panel and messy play cover for children to revisit or copy later. Older children could sort the colours into warm or cool shades or use recordable devices to describe what they did and share their predictions with a friend.

Adapt

Swap the paint for other sensory materials like coloured sand, playdough, jelly cubes or shaving foam for children who prefer different textures.

For children who dislike paint on their hands, offer tools like brushes, scrapers or gloves.

Glow in Action

"The light up buckets are perfect for calming outdoor activities at dusk. One child began scooping the sand into the bucket, counting each scoop. As she dropped the sand in, the weight changed the colour. It was like magic!"

Woodlands Nursery and Forest School

"What about using the Light Up Bucket as a magical potion ingredient receptacle? You could go out hunting for rare ingredients (or found natural objects from the outdoor area if you're feeling a little less magical) to make a magical potion. You can check if the ingredients are rare and magical enough by checking to see if the bucket lights up in response."

Beccie Hawes Cadmus Inclusive

"The world is full of magic things patiently waiting for our senses to grow sharper."

William Butler Yeats

GLOW UP

GET MOVING

Your Top 5 Resources

Immersive Projector
EY11864

Power & Potential of Glow and Physical Development

Bringing light into movement ...

- Motivates children to reach, stretch, twist and crawl as they explore the glowing shapes and objects.
- Encourages purposeful movements to achieve an outcome by tapping, shaking or moving the resources.
- Inspires children to follow paths and weave around obstacles – building different types of movement into play.
- Creates opportunities to dance with light and shadows, experiment with rhythm, different body shapes and develop spatial awareness.
- Offers a gentle invitation into active play that feels safe, exciting and non-pressured.

Top Tips and Ideas for Bringing Light into Physical Development

- Create a glow path using Light Up Lanterns, Glow Pebbles or small torches placed inside iridescent cones to guide children through an obstacle course. You may want to use them to create a secret walkway to a play provocation or learning activity.
- Hang lightweight scarves or ribbons near a light source such as the Early Years Projector or Immersive Projector – children can swish, wave, or dance with them, watching how the colours and different fabrics catch the light (risk assessment required).
- Add another dimension to movement games such as 'Follow the Leader', 'Simon Says' or 'Tig' by adding a light projector. Can the children catch their friend's shadow or copy and follow their shadow movements? Encourages full body actions in a fun, sensory way.

Light Up Tactile Glow Spheres
EY10974

Light Up Twist and Turn Cog Board
EY10971

Light Up Twist and Turn Spinning Tops
EY10972

Switch and Press Fine Motor Board
EY10565

- Offer Glow Cylinders during dance sessions, movement breaks or phonics sessions for exaggerated movements, added excitement and focus.
- Introduce 'Freeze and Glow' games using colour changing resources such as the Light Up Recordable Domes or Glow Pebbles. When the light turns a certain colour, the children do different actions e.g. blue means freeze, for red they have to hold a balance and green means move until you see the next colour.
- Add Illuminated Mark Making Boards to your provision. These are an engaging way to support early writing and fine motor control, especially for children who seek sensory input or for those who may avoid more formal mark making.
- Combine glow with physical fine motor challenges. Create a sensory circuit using resources like the Switch and Press Fine Motor Board and the Twist and Turn Cog Board. These can be displayed on the walls where the children may have to line up or wait to go into certain places such as the dining room.
- Use Glow Cylinders or Light Projectors to add a sensory element to phonics and mark making. Project letters or patterns onto the walls for the children to trace or use the glow cylinders to form big letters or patterns in the air.
- Have you got a mix of glow resources (alongside existing non glow resources) that support both fine and gross motor skills? Resources could include the Switch and Press Fine Motor Board and Twist and Turn Spinning tops for fine motor and larger construction resources such as the Glow Crosses, Arches and Crosses for lifting, stacking and moving around.
- Consider the space you are using and the outcomes you want to achieve. Smaller, cosier areas can encourage babies and toddlers to reach, crawl, and explore, while darkened open spaces/ rooms invite bigger movements like dancing, jumping or stretching.

Roll and Glow

Key Skills Development

- **Gross motor skills, coordination and control**
- **Turn taking, cooperation and teamwork**
- **Following rules and instructions (if playing a game)**

Language Opportunities

- Movement words and action words – roll, push, stop, change direction, shake, stack, roll, slide, balance and wobble
- Descriptive Language - patterns, slow, fast, spots, swirls

Activity

Demonstrate to the children how to push, roll and gently catch the **Glow Spheres**, drawing attention to the way they light up when tapped. Move on to exploring different movements using the Glow Spheres. Can they roll the glowing balls slowly or quickly or make them change direction with a gentle push?
Set up simple challenges such as rolling one or more Glow Spheres to a partner or aiming for a target like a hoop laid on the ground or sending it under a **Sensor-Activated Glow Arch** to trigger the lights. Encourage turn-taking and teamwork as they pass the sphere back and forth or take turns aiming for the targets.

Extend

Add challenge targets such as small boxes, tunnels, or numbered zones for aiming practise.
Introduce simple scorecards or coloured challenges e.g. 'Can you roll it into the yellow hoop?' Try combining multiple resources – can they build a glow pathway using **arches**, **Glow Cylinders and Connectors** etc to roll the spheres through?

Adapt

For younger children or those with emerging motor skills, keep the distance short and use a gentle slope or ramp to help the sphere roll. Sit facing each other on the floor to offer clear boundaries and support success.

Glow in Action

*"As an educational resource the possibilities of **TTS Glow Spheres** are endless. Most children enjoy playing with balls, just as they are fascinated by things that light up. This makes the glow spheres a great addition to your setting as they can go from being used supervised with babies to school age children.*

The spheres helped the children:

- Develop coordination
- Understand how their body is positioned
- Develop knowledge of moving objects
- Experiment with direction, force, cause and effect.

Kelly Shatford Early Years Teacher

Spin and Strengthen

Key Skills Development

- **Builds core strength, coordination and midline crossing**
- **Cause and effect**
- **Personal, social and emotional skills e.g. confidence and perseverance**

Language Opportunities

- Descriptive words – spin, twist, faster
- Directional language – clockwise, anticlockwise, left, right
- Reasoning language, 'What happens if you spin the top harder?'

Activity

Gather the children around the **Giant Light and Sound Spinning Top**, demonstrating how to sit upright with a strong steady posture. Show them how to spin the top using both gentle and strong force, noticing how the speed and direction affects the colour transitions and sound. Encourage children to explore:

- How fast they can get the colours to change on the spinning top?
- Can they stop the spinner on a colour that is called out?
- What happens when they turn it the other way or push instead of twist it?

Model different ways to interact: spinning with one hand or two or using slow or quick force. You might also like to link colours to actions (e.g. red = stomp, blue = wiggle) to combine physical movement with quick thinking.

Extend

Play games and add challenges e.g. can children take turns spinning and stopping on a chosen colour? Can they spin the top so it stays turning for 10 seconds? Can the children memorise the colour transitions? You could also record spin times and turn this into a simple measuring or graph activity.

Adapt

Support children by modelling slow, simple movements and helping them steady the spinner.

Look at the different types of movements we can make with the spinning top, for example, pushing it to make it wobble and spinning it using both hands.

Glow in Action

*"The babies were amazed by the **Giant Light and Sound Spinning Top**. They crawled over to it, used it to pull themselves up on and were delighted when it made a "boing" noise back at them. This encouraged them to repeat that action to get another response. The children pushed, pressed, tapped, rocked and tried lifting it, each time receiving some form of light or sound (or both) response from the spinning top. Great for our youngest learners developing motor control."*

Early Years Teacher Tinker Tent

Switch It On

Key Skills Development

- **Fine motor e.g. hand strength, dexterity, wrist rotation**
- **Cause and effect, stimulus-response**
- **Giving and following of instructions, and turn taking**

Language Opportunities

- Naming colours
- Cause and effect – 'It lit up when I pulled the cord'
- Using verbs - flick, press, twist, slide, pull

Activity

Position the '**Switch and Press Fine Motor Board**' on a wall, tabletop, or the floor so that children can easily access all the switches. Give children time to explore and experiment with the different switches. Can they work out how to illuminate all the lights on the board? Investigate the switches together and have discussions about the similarities and differences, look at how each one is activated and the movements needed. Have they seen these types of switches before? If so, where?
Ask questions such as 'Can you turn on all five lights?', 'Which one is the trickiest and why?

Extend

Create a colour sequence or action-based memory game.
'Can you switch them on in this order – yellow, blue purple?' or 'Can you turn on the lights using first a switch, second a pull and third a twist?'
You could also match the movements to an action in a story, 'Slide the green switch to open the gate'.

Adapt

Support younger children or those with reduced mobility by concentrating on one or two switches at a time – maybe the ones they are more familiar with or the ones that require bigger movements such as pushing the switch with the palm of the hand.

Shadow Dancing

Key Skills Development

- **Gross motor skills**
- **Expressing themselves using movement, shapes and colour**
- **Developing scientific thinking about light and shadows**

Language Opportunities

- Language opportunities
- Movement words – stretch, sway, twist, wave, spin, crouch
- Positional language – under, across, beside, behind, in front
- Language of comparison – big, bigger, smaller, tallest, widest

Activity

Use the **Immersive Projector** to cast a soft pool of light on to the walls. Add colourful scarves, bright voiles, or **Glow Cylinders** for the children to explore and move with. You might also play a range of music genres to support different styles of movement.
Encourage the children to step into the light and notice what happens to their bodies and the objects they are holding. Can they see their shadow on the wall? Which of their objects cast colours and which ones block the light completely?
Invite them to stretch, spin, wave, twist, and crouch, watching how their movements and props interact with the light and space around them. Encourage a range of movements, especially large, controlled movements as these will help build strength in the shoulders, arms and core – muscles that are essential for mark making and writing.

Extend

Try playing a shadow dancing game where children take turns creating shapes in the light for others to copy. You might also follow the session with large mark making. Attach paper to the walls. Using mark making resources, children can copy and trace patterns or letters that have been projected onto the walls.

Adapt

Some children may prefer to watch first or explore with smaller movements like waving a colourful voile or moving their fingers in the light.

Glow in Action

*"In the settings I visit, the **Switch and Press Fine Motor Board** provides the perfect opportunity to develop essential motor skills by pressing, sliding, rotating, pulling and turning. The best thing is that when you do just that something happens – a light comes on which teaches vital cause and effect skills. It can be just there for the braver children who do want to touch to explore in a self-guided moment of learning or can be an adult led activity in which children are encouraged to touch and see what happens whilst vital language is built as the adult describes what they are doing. I've seen it become missions to save the world as the tiny humans worked collaboratively to light up all of the lights to solve a secret password!"*

Beccie Hawes Cadmus Inclusive

Glow in Action

*"Some of our more reluctant writers hid in the den with the **Immersive Projector** for a fun session drawing monsters and buildings. It is a good size allowing 2-3 children to work together. Wipe board pens are the easiest to use as the children can wipe away their work."*

Educator Review TTS Website

GLOW UP

SCIENCE AND EXPLORING

Your Top 5 Resources

Early Years Light Projector
EY11674

Power & Potential of Glow and Light in Science and Exploring

Bringing light into Science and Exploring ...

- Encourages children to ask questions, notice changes and test out ideas using natural phenomena such as light, colour and shadow.
- Sparks curiosity about how things work – What makes it light up? Why does the colour change? Why does the shadow grow?
- Offers hands-on opportunities to explore early scientific concepts like reflection, shadows, along with properties of materials.
- Supports sorting, comparing and predicting skills.
- Makes science feel magical, engaging and accessible – even for those who may not usually choose investigation-based play.

Colour Changing Easi-Torches
SN45190

Glow and Go Bot
EY10564

Giant Light and Sound Spinning Top
EY11701

Light Panels
AV46657 (different size options available)

Top tips and ideas for bringing light into Science and Exploring

- Offer a range of materials with different properties for the children to explore, sort and experiment with. Include objects that are transparent, translucent and opaque with different textures and patterns. Great for encouraging observation and discussion.
- Provide children with coloured paddles, acetate sheets or resources with colour changing capabilities (such as the Easi Torches) so that they can mix and see what new colours they can make.
- Introduce different light sources that children can compare and experiment with. These could include torches, light projectors, glow resources and natural sources of light such as sunlight.
- Create simple shadow experiments - Can children change the shape or size of the shadow by moving closer or further from the light? Can they make shadows from different items before asking their friends to guess what items made the shadow?
- Add potion bottles filled with different materials (buttons, feathers, water beads, coloured water) for children to compare, shake, shine light through and describe. Even the simplest potion feels more magical when you give it a swirl and shine a light through it!
- Hands-on play is a great way to introduce scientific vocabulary that children will come across later in school. As they explore with light and materials, they can begin to hear and use terms like transparent, opaque, translucent, reflective and shadow in meaningful ways.
- Use light to encourage children to test their thinking and make predictions – What do you think will happen when we shine the torch on this? Why?
- Let children take the lead and give them time to experiment independently with light. Offer a mixture of resources that light up, such as torches or the Early Years Projector, alongside everyday items like boxes or pop-up dens and let them become scientists and explore! Will they search out dark corners to investigate, create mini dark theatres, or use the beams to spark imaginative play?
- Offer children opportunities to document their discoveries by drawing, mark making or recording their thoughts using a recordable device such as recordable clipboard or taking photos on a camera.

Force, Friction and Movement

Key Skills Development

- **Exploring scientific concepts through play**
- **Physical development**
- **Maths – comparing size, weight, and speed**

Language Opportunities

- Comparative language
- Scientific language – force, friction, slow, fast, rough, smooth
- Asking and responding to questions

Activity

Provide children with both the **Giant Sound and Light Spinning Top** and some **Light Up Twist and Turn Spinning Tops**. Place them on a flat, hard surface. Ask the children how they are similar and different. Which one do they think will be easier to spin? Why?

Model spinning each top and draw attention to how much force is needed. How can we increase speed and force with the different spinning tops? Do we need one or two hands to spin? Can we alter the speed of the spin?

Investigate how different surfaces affect how the tops move. Try spinning on a tabletop, carpet, tuff tray or uneven surface. Encourage the children to make predictions – Do you think it will spin for longer on the carpet or floor? Which surface will make it stop more quickly? Why?

Extend

Set up different science challenges:

- Spin each top and count how long it takes to stop.
- Try to make one spin for longer than the other.
- Use different materials e.g. a ramp or textured surface to explore changes in movement.

Adapt

Focus on just one type of spinning top at a time and explore simple concepts to start with using language such as fast, slow, big and small.

For children with developing motor skills, start with the spinning top that is easier for them to explore.

Glow in Action

*"Children demonstrated increased curiosity and engagement when playing with the **Giant Sound and Light Spinning Top**, spending long periods of time exploring and discovering."*

Early Years Teacher Raploch Nursery

How Does it Work?

Key Skills Development

- **Builds core strength, coordination and midline crossing**
- **Cause and effect**
- **Personal, social and emotional skills e.g. confidence and perseverance**

Language Opportunities

- Descriptive words – spin, twist, faster
- Directional language – clockwise, anticlockwise, left, right
- Reasoning language, 'What happens if you spin the top harder?'

Activity

Ask the children to work out how they might wake up the **Glow and Go Bot** to make it light up. Allow them to experiment by pressing different buttons. What do the buttons and different settings on the robot do?

Ask them to explore how they can make the Glow and Go Bot move to different locations by travelling forwards, backwards and sideways. Can they make the Glow and Go Bot travel to 'visit' a particular person or head towards a particular location in the setting? Develop this to include sequences of movements to get around an obstacle course or to get to less straightforward locations. You could add more resources to the obstacle course to make it more interesting such as the sensor activated arches (will light up as the bot travels underneath) or mirrored spots that will reflect Glow and Go Bots under lights as it passes over them.

Extend

Challenge the children to design their own glow-themed obstacle course with different affects. Add in timed challenges or ask 'Can you get the bot through two arches and activate the lights without touching the sides? Children could also start to record their sequences using arrows or pictures.

Adapt

Allow time for the children to explore and be curious. Gently model and repeat actions and the relevant language together.

Glow in Action

*"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."*

Paola Lopez Founder & Executive Director at Kinderoo Children's Academy, Inc

Exploration and Experimentation

Key Skills Development

- **Exploring light, transparency and shadow**
- **Maths – comparing shape, size and patterns**
- **Develops creativity and curiosity**

Language Opportunities

- Descriptive language – bright, shiny, darker, lighter, see-through
- Colour and pattern – red, blue, striped, spotted
- Scientific language – shadow, light

Activity

Set up a **Light Panel** on a low surface and provide a range of materials for children to explore. Include coloured paddles, translucent sorting domes, acetate sheets, natural materials such as leaves and sealed translucent potions bottles filled with feathers, buttons or coloured liquids (risk assessment needed). Add a mixture of translucent objects in different shapes and sizes.

Encourage children to place items on the light panel. Observe how the light changes what they see. What happens if you overlap the blue and yellow acetate sheets? What do the buttons or coloured water in the bottles look like when the light shines through? Children can layer colours, sort by shape/colour/size and explore different patterns and textures.

Extend

Invite children to create pictures or patterns using the materials on the light panel before taking photographs of their designs.

Explore how the same item looks when on or off the light panel.

Adapt

Offer a smaller selection of materials at a time to reduce visual overwhelm.

Make sure that the light panel is in an accessible place and at an accessible height for the children in your setting.

Light Explorers

Key Skills Development

- **Exploring light, transparency, colour and shadow**
- **Physical development – motor skills**
- **Maths – comparing shape, size and position of shadows**

Language Opportunities

- Scientific language – light, shadow, transparent, translucent, opaque
- Naming of colours
- Language of cause and effect

Glow in Action

"The Colour Changing Easi-Torches are great for exploring light and shadows without the worry of replacing batteries or having a dim light. A perfect way of combining technology and science for early years children."

Carol Allen
Education advisor for ICT and Inclusion

"Light play is particularly successful when children have the opportunity to control the light source. When they are able to do this, they are not only exploring concepts such as cause and effect – like pushing a switch to make a torch come on and off. They are also having some powerful control over the emotional connections of anyone who is within their near vicinity.

How often have you heard shrieks of delighted terror when someone has switched off the torch in the dark tent? This is more than just controlling light, it is about connecting with and affecting the emotional states of others."

Alistair Byrce-Clegg

Activity

Dim the lights or go to a dark outdoor area and demonstrate how to turn on the **Torches** and cycle through the different colours. Have a range of interesting items available (items with patterns for children to shine the light through – colanders, translucent items – cellophane, iridescent boulders or radiant cones, and natural items – feathers, leaves). Invite the children to experiment by shining light through the different objects. Talk about what they notice. Encourage them to observe what happens when they move the torch closer to or further away from the object. Can they make the shadows grow, shrink or stretch? Can they create different coloured shadows? What happens if they shine a yellow light though a red translucent potion bottle? Wonder aloud and investigate how a shadow is made.

Extend

Set up a 'Shadow Lab' with light resources such as torches, mirrors and light projectors. Can they practise using the light sources to make interesting shadows and different patterns?

Add another challenge by asking the children to have a go at shining and mixing the coloured beams of light on to a white wall or in a white pop-up tent. What do they notice?

Adapt

Use larger, high-contrast or textured objects (e.g. bold shapes, patterned acetate, or tactile items like netting and voiles) to make changes in light and shadow easier to notice.

Give children the option to observe first and join in when ready, respecting different comfort levels with darkened environments or new resources.

GLOW UP
STORYTELLING

Your Top 5 Resources

Light Up Lanterns
SS46614

Power & Potential of Glow in Storytelling

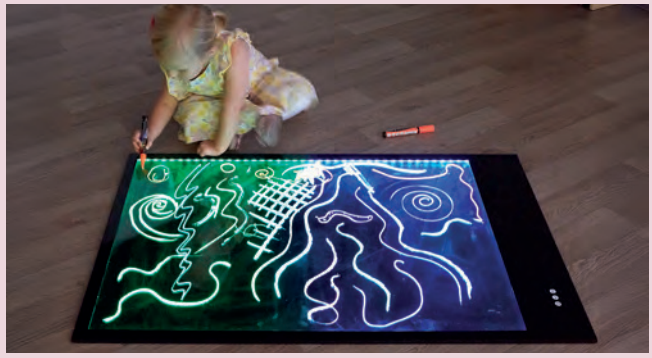
Bringing light into storytelling ...

- Creates a magical atmosphere that draws children into the story.
- Helps set the scene. The different colours and glow effects can suggest moods, settings or times of the day.
- Makes quiet, cosy storytelling moments feel special and memorable.
- Invites children to be storytellers. Using torches, projectors or glow resources enables children to add drama and excitement to their tales.
- Allows you to create immersive experiences – turn off the lights, add a light projector, build the scene, play some sound effects and step into the story!

Light Up Phones
EY10980

Colour Changing Easi-Torches
SN45190

Immersive Projector
EY11864



TTS Rechargeable Giant Illuminated Mark Making Board A1 **EY10425**

Top Tips and Ideas for Bringing Light into Storytelling

- Use light sources such as torches and lanterns at story times to create a calm, magical, relaxed atmosphere.
- Give children glow resources such as the Glow Pebbles, Glow People or Light Up Lanterns so they can change the colour to show their thoughts during the story such as how they think the characters are feeling or to identify the different parts of the story.
- Provide small world resources and different materials alongside light projectors so children can build and immerse themselves into the settings from their favourite stories.
- Add Illuminated Mark Making Boards and chalk pens so children can draw story maps, scenes or characters linked to the tales they have created or listened to.
- Set up small world scenes on a Light Panel or Giant Illuminated Mark Making Board so that children can change the back light to match the story or move the figures around to retell and bring their tales to life.
- Act out parts of stories using glow resources. Glow Cylinders can become magic wands for casting a powerful spell, the Glow Pebbles could transform into secret treasure and every superhero needs a torch to discover secret messages or find their way in the dark.
- Create a dark den or cosy nook with soft lighting where children can relax and enjoys books.
- Offer torches or light sources so children can create shadow puppets to tell stories in a different way.
- Place recordable devices such as the Light Up Recordable Domes in the book area so children can listen to parts of their favourite stories, guess what happens next, record short stories for friends, or add simple questions about different books to spark conversations.

Sharing Tales with Light Up Phones

Key Skills Development

- **Imaginative play and storytelling**
- **Cause and effect**
- **Listening and attention**

Language Opportunities

- Story sequencing
- Descriptive language
- Intonation and expression (taking on the roles of different characters)

Glow in Action

"Using different Christmas related props alongside the projector, the children created a Christmas Eve setup and talked about Santa flying with his magical reindeer to the roofs of every house. After a while, they decided to get some snowflake fabric and together draped it over the projector to make it snow."

Early Years Practitioner

Activity

Introduce the children to the **Light Up Phones**. Demonstrate how pressing a button makes the phone light up and how speaking into it allows you to clearly hear your own voice.

Model a pretend phone call by making one light up and answering it with a playful scenario: 'Hello, Oh! You need help finding the missing porridge in Goldilocks' house? I'm on it!'

After modelling, invite the children to take turns 'receiving a call' with a story prompt. This could be a problem to solve in a well-known tale, a favourite part of a book to retell or a message from a story character asking for help. Through a simple telephone call, play in other areas such as role play, could be elevated to another level.

Extend

Create a 'Story Call Centre' in your role play area with story books, clipboards and mark making resources. Challenge children to take messages from pretend story characters and pass them onto a friend either verbally or by using marks to write a note.

Adapt

Offer story picture cards, story books or familiar props for children who need support thinking of ideas.

Try adding recordable buttons with pre-recorded character messages – e.g. 'This is Red Riding Hood. Can you call the woodcutter to help me?' Make a pretend call to give them details such as her name, location and the problem.

Step into a Story – Immersive Worlds

Key Skills Development

- **Creative thinking and imagination**
- **Early scientific understanding**
- **Motor control – handling and placing of props.**

Language Opportunities

- Storytelling language and story structure
- Speaking in character (dialogue)
- Expressing their ideas

Glow in Action

"We follow our children's interests (especially younger children) and set up provocations and story settings (with the projectors) such as Dinosaur land, Space landscapes, Autumn scenes, and Christmas workshops."

Early Years Teacher Dukes and Duchesses Nursery

Activity

Set up the **Immersive Projector** in a space to cast light onto the ceiling and surrounding walls. Explain to the children that they can transform this space into any world they wish to step into. Offer a collection of props and loose parts to help bring their story ideas to life. Examples include:

- Small world dinosaurs and natural materials such as plants and fabrics to create a Jurassic world.
- Construction blocks, carboard boxes or glow bricks to create a cityscape for hero and villain adventures.

Invite children to collaborate to build an immersive story setting. They can draw on the light dome with chalk markers to add further projections to their story setting and add music to create atmosphere.

Extend

Encourage children to retell their adventure to others or draw a map of their world to keep the story alive. They could take photos of the scene and display them alongside speech bubbles or recordable buttons with their character voices. Can the children create different story settings? A city, a jungle, outer space, or a scene from a favourite book.

Adapt

Offer story dice, recordable buttons with sound effects (e.g. roaring dinosaurs) or familiar characters/ figures to help children who need ideas to get started.

Support children who prefer smaller spaces by creating a focussed scene with the Early Years Projector before moving on to a more immersive experience.

Encourage children to help build the story scenes even if they are not quite ready to act out the stories.

A Cosy Nook for Reading a Book

Key Skills Development

- **Encourages the love of books and reading**
- **Helps children to relax and regulate**
- **Encourages conversations about stories**

Language Opportunities

- Language related to books – title, page, cover, author
- Emotions and feelings – how the characters feel and the link to light
- Parts of a story – beginning, middle, end, resolution, character, plot

Activity

Create a special reading nook for children who enjoy a quieter or more sensory reading experience. Use soft materials and resources to make it more inviting – a dark den, rugs, soft glowing cushions and blankets to create a cosy, enclosed feel. You could also include colour changing **Light Up Lanterns** or **Easi-Torches** to add atmosphere and a soft glow.

Show the children how they can use the torches to light up the pages as they read or change the lantern colours to match the mood of the story. For example, turn the lanterns to blue if reading a story about the ocean or red for the story about a dragon.

This cosy, softly lit book corner invites children to choose books, snuggle up alone, or share stories in a magical atmosphere that feels slightly different to the usual reading/book area.

Extend

Invite children to become 'lighting helpers'. Can they identify different parts of a story or characters by changing the colour of the light to represent them?

Adapt

Offer a range of books such as sensory books, interactive books or audio stories so that they are accessible to all.

Use the Easi-Torches to highlight parts of a page if children need support focusing in on certain images or text.

Use the space to read a story before nap time.

Glow in Action

"Whether used in science investigations, sensory spaces, or imaginative storytelling, the Colour Changing Easi Torch opens a world of possibilities for learning and play."

Hayley Winter

"Using a set of torches, let children into a secret den with their reading book, library book or favourite book to secretly spy read...No sounds should be heard!!"

Carol Allen and Claire Graham

Tell Me a Story

Key Skills Development

- **Retelling stories that have been shared**
- **Creativity and imagination**
- **Early mark making, labelling and writing**

Language Opportunities

- Storytelling words – beginning, middle, end, first, then, next
- Sharing of new vocabulary
- Discussions about what the children have drawn

Activity

Choose a favourite book that the children know or a story made up by the children. Re-read or retell it, pausing to talk about key parts such as 'Where does the story take place?', Who is there?', and 'What happens?'.

Invite children to use the **Giant Illuminated Mark Making Board** to bring the story to life. Some examples include:

- Draw an illuminated scene from the story. This could be their favourite part or what happens next
- Create a simple story map showing the characters, setting and chain of events

Demonstrate to the children how they can change the backlight of the board, for example, blue for nighttime or green for a story taking place in the forest. Once the children have drawn the scene from the story, they may want to use it as part of their play by adding small world characters, puppets and other props.

Extend

For children who are ready, encourage them to label the picture or story map. Some may want to have a go at writing simple sentences on the board to explain what is happening.

Adapt

Place the Giant Illuminated Mark Making Board in different areas to suit children's needs e.g. on the floor so children can lie on their tummies and make big marks, or on a table for those who prefer to sit or stand.

Support children who may not be ready to write by encouraging them to draw pictures, make marks, or act out the story using small world resources.

Glow in Action

"The Illuminated Mark Making Boards (giant and smaller ones) are brilliant! Every time the children use them, they are so much more engaged, show high levels of curiosity and will mark make for prolonged periods of time. The children love nothing more than drawing or writing something and looking at it in all the different colours by using the button to change the colour of the light. We have combined them with loose parts and created story scenes."

Early Years Teacher Dukes and Duchesses Nursery

GLOW UP
SENSORY AND CALMING SPACES

Power & Potential of Glow in Calming and Sensory Spaces

Creating calm through light...

- Provides gentle, soothing visual input that can help children feel safe and settled.
- Offers a quiet focus – watching soft, changing colours can calm busy minds and bodies.
- Creates calming spaces where children can rest, relax or take a sensory break.
- Supports emotional regulation by giving children tools and strategies to manage big feelings or moments of overwhelm.
- Encourages children to explore at their own pace, using glow and light resources as a gentle invitation to engage their senses without feeling rushed or overstimulated.

Top Tips and Ideas for Bringing Light into Calming and Sensory Spaces

- Use soft glow resources such as Light Up Lanterns, Light Projectors or Glow Rollers to create a soothing peaceful atmosphere.
- Include Illuminated Mark Making Boards so children can doodle or draw as a self-soothing activity.
- Create a pop-up sensory space by using a dark den. This can be adapted for the needs of the child and can be moved to different areas.
- Think about sensory profiles. Are the children using the space for sensory seeking or sensory avoiding? Choose resources that meet the needs of the children in your setting.

Your Top 5 Resources

Giant Sensory Light Up Glow Cylinder Tube **EY07243**

Fibre Optic Tails
SD10640

Light Up Infinity Mirror
EY11032

Rechargeable Fibre Optic Sparkle Rug **SD10372**

Light Up Cushions
SD10087 & SD10088

- Consider having baskets of resources that can be added or easily removed from the space to meet specific sensory needs e.g. baskets containing different sounds, textures, lights etc.
- Use gentle glow resources as part of your nap time routines. Soft, calming lights or glow resources can help children unwind, relax and feel ready for rest.
- Include rugs, cushions, beanbags and blankets (could be weighted) so that the children can choose whether to sit, lie down or curl up as they regulate and relax.
- Include other therapeutic resources alongside the glow such as Breathing and Mindfulness Boards, Calming Kittens, Calming Cat or the Therapeutic Toolbox. These teach children helpful strategies for self-regulation and wellbeing.
- Encourage children to choose the light level or colour they find the most comforting, giving them control and ownership over their calming space.
- Add mirrors to the space such as Light Up Hand Mirrors or an Infinity Mirror. Children can observe their surrounding indirectly and gaze at their reflections which can help with emotional regulation and self-awareness.

Glow Sensory Play

Key Skills Development

- **Supports children to relax and self-regulate**
- **Develops motor skills**
- **Understanding of cause and effect**

Language Opportunities

- Talk about how the resources make you feel.
- Vocabulary related to the different senses
- Discussions about likes and dislikes

Activity

Create a sensory area with a mix of glow resources that offer children different ways to explore light, movement, sound and texture. Include items that appeal to more than one sense, so children can touch, see and hear what happens as they play. You could use:

Glow Rollers that rattle and change colour when children roll, shake or stack them. Children can tip them upside down to watch and listen to the beads as they move.

Glow Discs and **Spheres** with textured surfaces. Children can activate the light by rolling or tapping them.

Light Up Spinning Tops that light up and make sounds as children spin or move them in different directions.

Add soft rugs and cushions so children can sit, kneel or lie down as they explore using their senses.

Extend

Talk about what they see, hear and feel. Encourage children to express how the light, sound, movements and textures make them feel. What do they like or dislike?

Adapt

Start with one or two items for children who prefer fewer choices. Add more items or different textures, lights or sounds if a child indicates that they want more sensory input.

Glow in Action

"In addition to using the sensory tent to support regulation, and as a dark space for sensory and glow resources, the tent, as our pupils have found out, can have a multitude of different uses and has quickly become a very popular addition to our classrooms!"

Chadsgrove School Support Services

Exploring Feelings and Emotions Through Light

Key Skills Development

- **Managing feelings and emotions**
- **Self-regulation**
- **Developing an understanding of how others are feeling (empathy)**

Language Opportunities

- Feeling words – sad, happy, calm
- Regulation vocabulary taught through co-regulation
- Express feelings using non-verbal communication

Glow in Action

"A simple but effective start to creating a calming space can be achieved using the LED Waterproof Rechargeable Lanterns and some glow resources. These are perfect for a sensory space, a sleep room, a chill out zone, in role play areas or anywhere that needs a calming feel. They can offer a beacon of calm in what can sometimes be a fraught space."

Beccie Hawes Cadmus Inclusive

Activity

Set up a cosy, calm area with soft furnishings. Add a selection of glow resources such as **Glow People, Glow Construction Blocks** or **Glow Pebbles** that can change colour and that the children can interact with and hold.

Talk to the children about the different feelings and emotions that we experience. Demonstrate how they can change the colour of the resource to match how they feel. For example, 'Red might mean you are cross or full of energy, blue might represent calm or a sad feeling. What colour are you feeling today?' It is important to note that different colours will symbolise different things for each child.

Discuss feelings and emotions. How do the different emotions make them feel? For example, 'Sadness makes me feel empty and when I'm angry I feel fizzy'. Can the children talk about the times they have experienced these feelings? Talk about how feelings can change throughout the day.

Extend

Add a basket of books about feelings and emotions to the space. Invite children to pair a book with a glow resource that can change colour – 'Can you change the colour to show how the bear is feeling in the story?'

Adapt

Use clear visuals such as feelings faces/fans, mirrors or real photos alongside the glow resources to help link colour and feelings for children who need more support. Have conversations about feelings and emotions when the children are calm and settled, rather than when they are dysregulated. This helps them to practise the strategy when they feel safe so that they have it to use when needed.

Calming and Regulation

Key Skills Development

- **Managing feelings and emotions**
- **Self-regulation**
- **Self-awareness**

Language Opportunities

- Feeling and calming words
- Language related to regulation
- Express feelings using non-verbal communication

Glow in Action

"Staff in our Little Explorers have worked with some TTS light up sensory resources to see if they can enhance pre-sleep time provision. We saw a positive correlation between using the sensory light up resources and a calming environment for the children pre-sleep time."

Nursery Manager
Little Feet Nursery

Activity

Create an area in the setting or classroom (this could be a dark den) that children can use when they need a moment to feel calm, quiet or safe. Choose gentle glow resources that give off soft ambient light without too much stimulation (this can be important for sensory avoiders). You could include resources such as:

- Gentle **Light Up Cushions** that children can snuggle against or sit on.
- **Fibre Optic Sparkle Rug** to lie or sit on. This adds a soft twinkle without being too bright.
- **Breathing and Mindfulness Boards** so that the children can practise calming strategies.

Keep the space simple, using low lights and neutral colours to make it feel peaceful and calm. Add soft blankets or beanbags alongside the cushions so children can sit, curl up, lie down or envelop themselves if they wish.

Extend

Teach children mindfulness techniques or self-regulation strategies to use when upset or overwhelmed. Have a basket of books related to different feelings and situations available as well as sensory resources so that these can be brought into the space for children to explore if needed.

Adapt

Use calm moments to talk about how this space helps, so children know they can use it when they feel overwhelmed or dysregulated.

Use the space throughout the day, not just for moments of upset.

Creating a Sensory Space or Room

Key Skills Development

- Emotional regulation
- Self-regulation
- Calming techniques and strategies

Language Opportunities

- Vocabulary related to different feelings and emotions
- Language related to regulation
- Positive self-talk (inner voice)

Activity

Design a more permanent sensory room or space with a range of light and glow resources where children can pause, rest, reset and explore. You may wish to include resources such as:

- An **Infinity Mirror** to lie in front of or sit beside to watch the never-ending tunnel of lights and their reflections.
- **Giant Light Up Sensory Cylinder Tube** or **Bubble Tube** in the corner for soft shifting light and a visual focal point.
- **Fibre Optic Tails** that children can run their fingers through or drape around them
- Sensory and textured resources such as **Glow Spheres, Fidgets, Light Up and Vibrating Cushions** or **Sequined Motor Boards** for the children to feel and explore.

Use soft rugs, beanbags or floor cushions to add extra textures and to make the space inviting, calming and cosy.

Extend

Place recordable devices around the room with calming strategies on for the children to listen to or do if needed.

Have soft music or white noise available for those who are calmed by sounds.

Adapt

Add baskets of resources that cater for the different senses and needs of the children. These can then be accessed or packed away easily depending on the situation.

Glow in Action

"Resources from TTS, including the Light Up Infinity Mirror, Glow Pebbles and Hurricane Tube have also formed part of our nurturing strategy that has been developed across the trust. This has meant that pupils have been offered wider opportunities to develop independent strategies for self-regulation."

Teacher
Brookfield Primary School

"Light and Colour can play an important role in a sensory room. From low level lighting to bright lighting, we included lots of different visual and light experiences, such as a hurricane tube, fibre optics, a sparkle rug, light up cushions, glow resources, and illumi light up writing boards. By offering a range of both bright and neutral resources, staff and children could tailor the sensory experience based on individual needs and preferences."

Primary Teacher and SENCo

Glow Up Schematic Play

Schemas are a natural part of how young children learn. They are patterns of repeated actions or behaviours that help children test ideas, make sense of the world, and build a deeper understanding through play. By recognising schemas, we can offer resources and invitations that match children's interests and thinking, supporting curiosity, problem solving, and confident exploration.

Here are some examples of how we can bring light and glow into schematic play

Transporting

Children can use the Light Up Collector Buckets to carry objects such as Glow Pebbles or water from one area to another, extending their fascination with moving things while adding the wonder of light. They can also press the buttons on a Glow and Go Bot to make it travel to different locations.

Trajectory

Children can explore how things move by rolling Glow Spheres and Glow Discs across the floor or watching the beads in the Glow Rollers cascade as they are tipped upside down. These resources help children see the paths and directions objects take as they push, roll or slide them, adding an extra sensory element to trajectory play.

Enveloping

Children might wrap scarves, voiles or fabrics around glow resources such as Glow Pebbles or Cylinders. Some children may choose to envelop the Immersive Projector with their bodies, investigating how light is hidden or revealed.

Transforming

Use a variety of resources to see how light and colour can completely change a space or object. Children might build and construct around a Light projector to transform the walls with patterns, colours and shadows, or experiment with colour changing glow pebbles, people and trees to see how the colour shifts. Children begin to understand cause and effect as they notice how their actions and choices can transform what they see.

Connection

Light up construction bricks, cylinders, arches and crosses invite children to join pieces together, noticing how parts fit together and come apart.

Rotation

Children often love to spin and twist things and glow resources can make this even more captivating. They might explore Light Up Spinning Tops where they can watch the rotating lights or spin the Glow Pebbles. This fascination helps children experiment with movement, speed and direction while adding the magic of light into their play.

Positioning

During play, children may line up Glow Cubes, position Glow People in Glow Houses or place Glow pebbles in patterns or sequences, satisfying the need to position and order objects in different ways.

Enclosing

Some children love to surround objects or spaces, and glow resources make this even more interesting. They might use Glow Arches, Glow Houses or Glow Bricks to build walls or create little enclosures around objects. This helps them explore with spaces and boundaries, noticing how light changes when it is enclosed.

Orientation

Children exploring orientation love to see things from different angles and viewpoints. Glow resources can support this by inviting children to peek under Glow Arches, gaze into the Infinity Mirror, move objects around on a light panel or move around the Immersive Projector's patterns on the walls, floor and ceiling. This encourages them to move their bodies in different ways while they play and see how the light changes from each new position.

"It's the things we play with and the people who help us play that make a great difference in our lives."

Fred Rogers

American television host and author