

The Science of Fun: How playful learning can support inclusion and belonging for neurodivergent children in schools

PLAY

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INCLUDED

[Playincluded.com](https://playincluded.com)



Playful introductions





- Introduction to Play Included
- The importance of play for inclusion
- Applications of playful learning
- Lessons from our Brick-by-brick programme



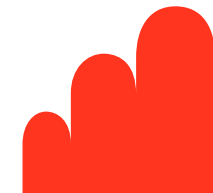
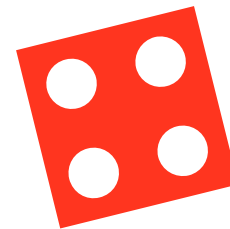
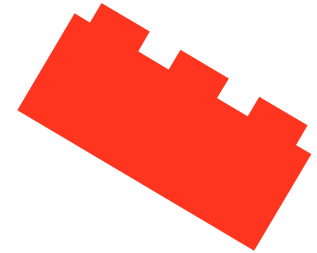
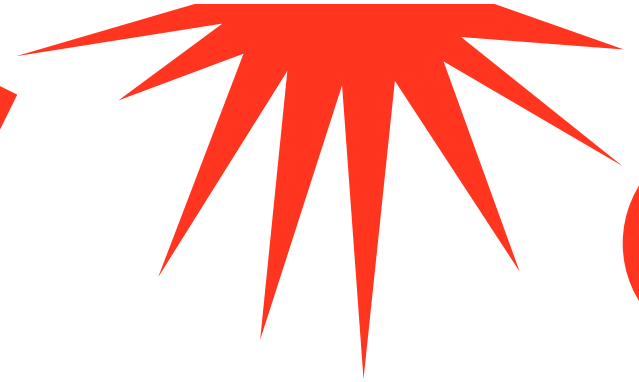
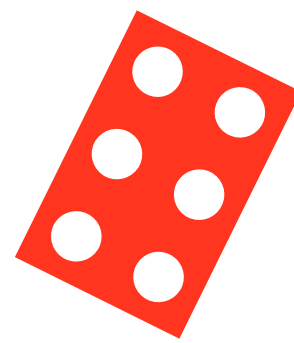
Play Included C.I.C.

Not-for-profit in the UK, partnered with:

The **LEGO** Foundation

We offer play-based programmes to support children and young people, and training for health and education professionals in the **Brick-by-Brick programme.**

**We believe that play
has the power to help all
children grow.**



Our programmes and activities

- Play at home activities
- Building Friendships
- **Brick-by-Brick** programme

Activity 01

Moving with bricks

Have fun moving with bricks by using them in different ways around your body and copying each other as you do it.

Skills we will be engaging

- SOCIAL — Laughing together, talking, listening.
- EMOTIONAL — Having fun.
- COGNITIVE — Remembering and copying actions.
- CREATIVE — Making up actions.
- PHYSICAL — Moving your body.

You will need

- 4 LEGO® bricks (DUPLO® bricks are best as they are bigger).

Getting ready

- Aim for a time of the day that works for your family.
- Read the activity beforehand and get the materials ready.
- Feel free to adapt the activity to meet individual needs (e.g. avoid disliked colours or use a soft surface to reduce brick noise)
- Have a snack and a drink, a movement break and a quick trip to the toilet.

How to play

- 01 Get a **matching pair of bricks** each. Explain that you will be copying each other. "See if you can do what I do!"
- 02 **Tap the bricks** above your head so that they make clicking sounds. Ask your...

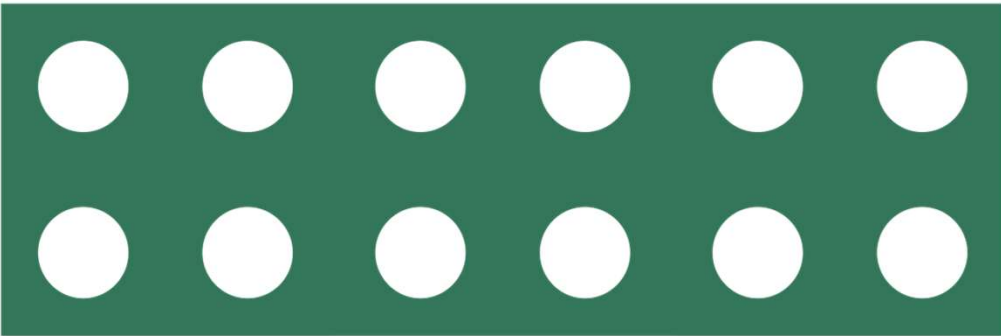
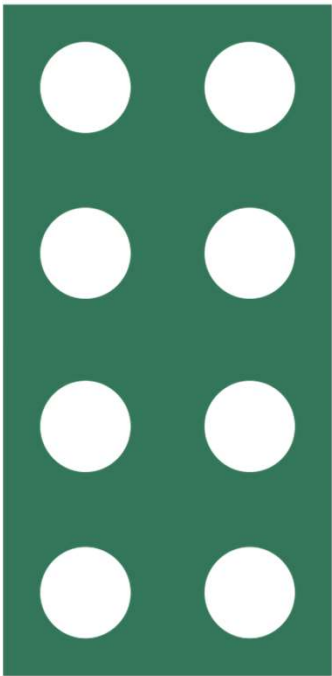
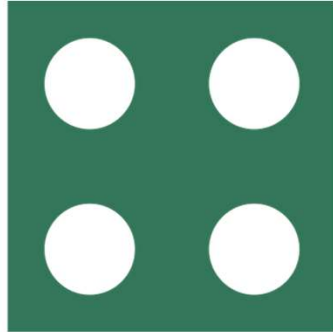
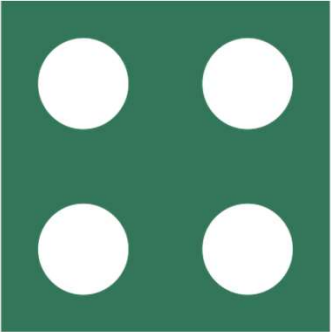
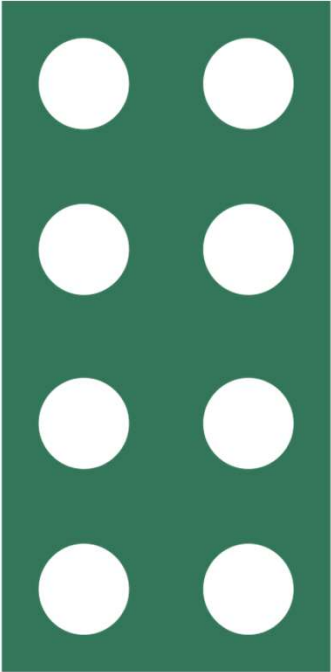
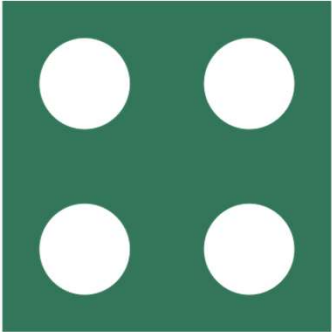
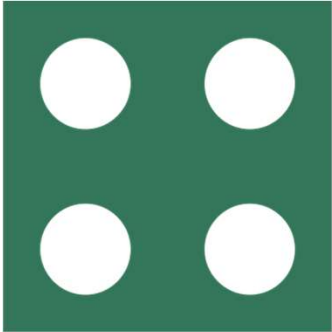


A vibrant space-themed background featuring a central LEGO astronaut figure in a blue suit and helmet, floating in a colorful nebula. Surrounding the astronaut are various floating objects: a blue electric guitar on the left, a yellow trumpet on the right, a small white card with a red heart in the bottom left, and a glowing blue planet in the top right. The text 'Build THE Change' is prominently displayed in white, with 'Playful Schools' written below it.

Build THE Change

Playful Schools

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What is playful learning?

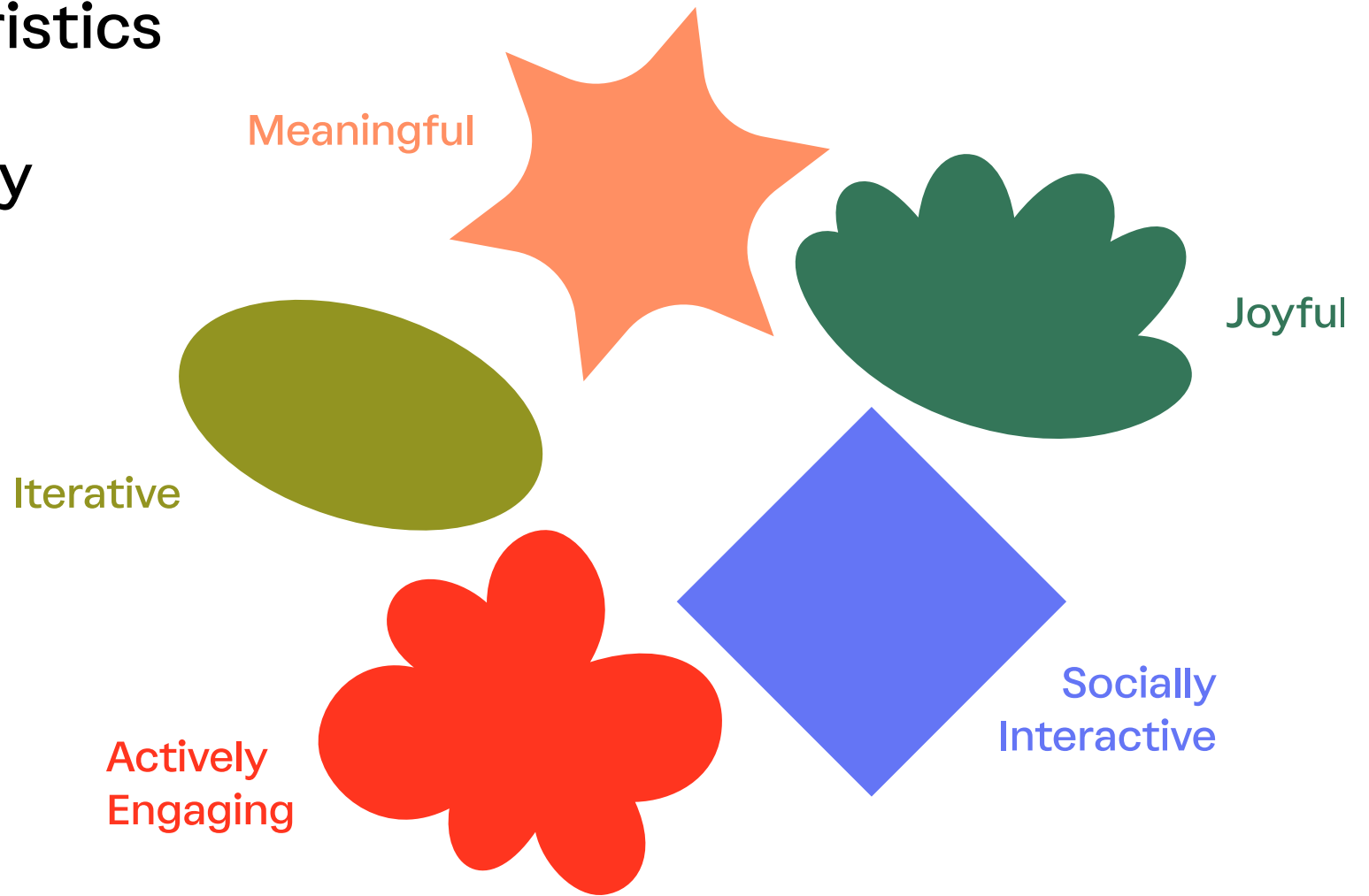
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5 Characteristics of Learning through Play



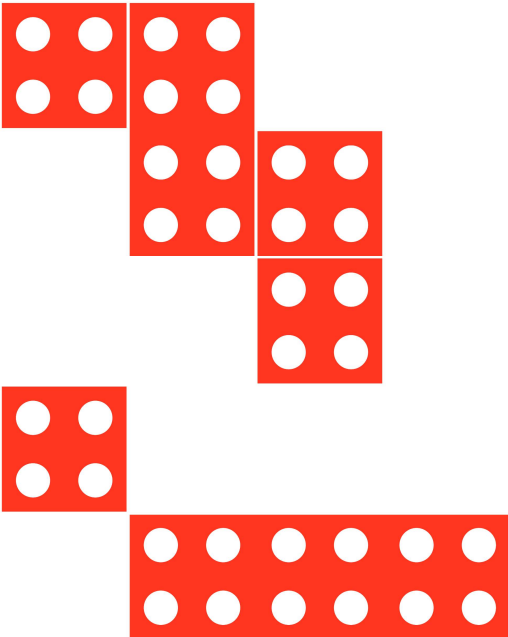
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What do we learn as we play?



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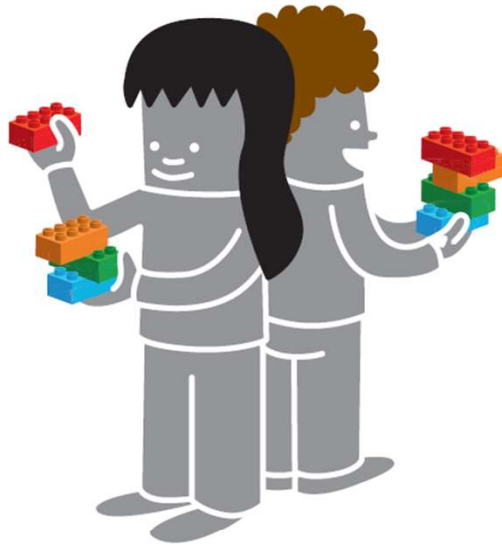
Back to Back

Children learn to:

Use descriptive language

Think from another person's perspective

Speak about own and others' behaviour and consequences

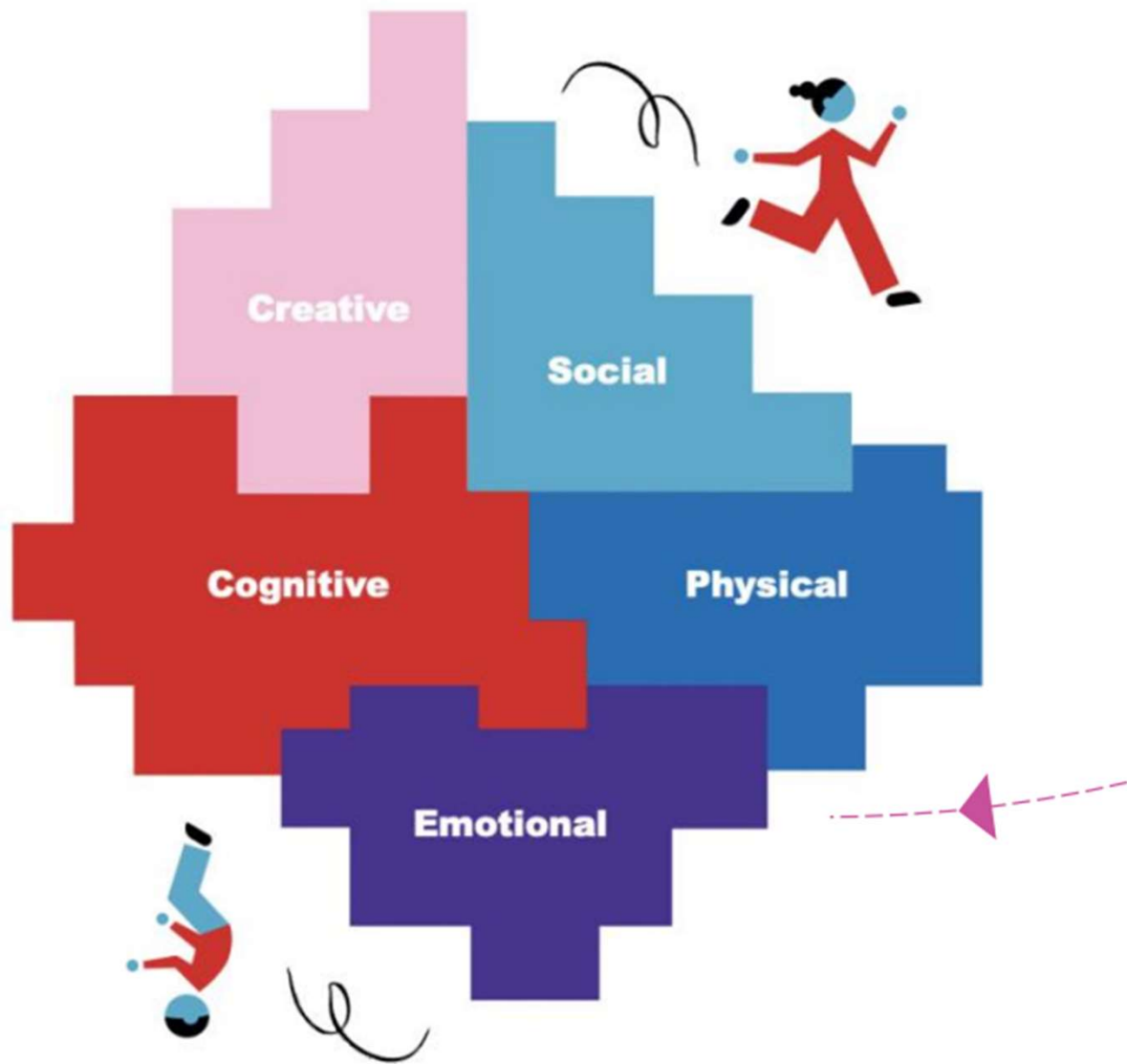


Base Activity

1. Children sit or stand in pairs with the same three bricks.
2. One child builds a model, and then explains to the partner how to build the same model.
3. The partner builds without looking or asking questions.
4. The pairs compare their models and discuss how it went.

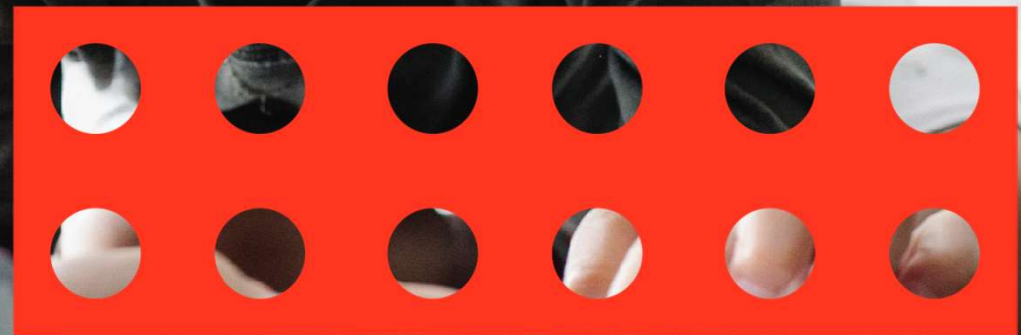
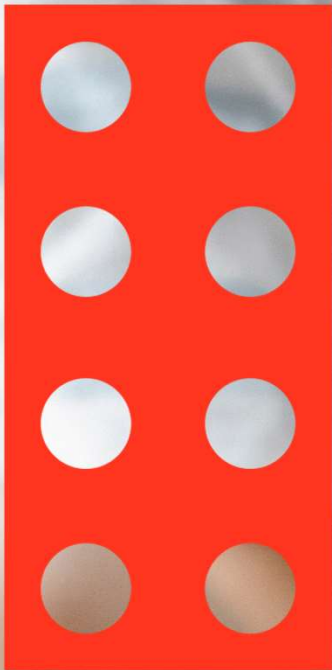
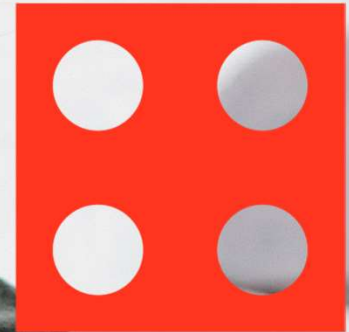
Guiding questions

- *How did you explain how to build the model?*
 - *What instructions are clear and helpful?*
5. Children swap roles and repeat the activity.



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Why is learning through play important?



Every child wonders what they'll be when they grow up

But how do they prepare for a world that keeps changing? Who'd have thought drone pilot or content creator would be a job thirty years ago?

Through play, children flex and find their way. Instead of noting down rigid facts and figures, they hone ways of thinking, creating, working together and testing ideas. All skills they'll need to thrive throughout their lives.

So the sooner we bring learning through play into every home and classroom, the sooner we help our children get set for tomorrow. Whatever tomorrow looks like.



The value of affirmative play

- There is no wrong way to play
- Play is an opportunity to show skills and interests
- Play is a source of connection – e.g. shared interests, providing accessible spaces for children who might otherwise be excluded
- Children can build positive identity, belonging, and confidence through play
- From an autistic perspective, play can be an escape that helps manage anxiety and promote communication and friendships

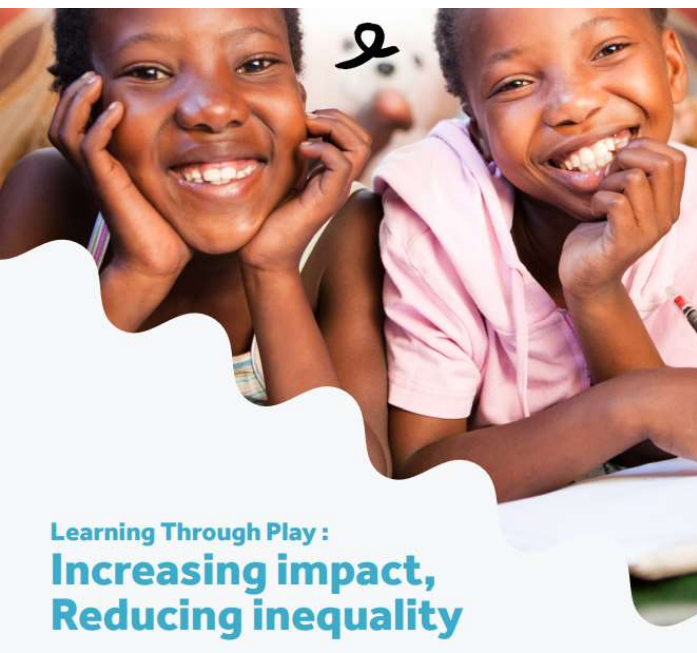
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Learning through play support children's cognitive, creative, emotional, social and physical skills



- **Over 300 studies** have supported the link between play and children's learning and development
 - Playful learning experiences promote children's **cognitive, creative, emotional, physical and social development**
 - Children's development relies on all these skills which are interconnected, and this interconnected learning can be best supported through **playful learning experiences which naturally combine different skills and outcomes**
 - **Free and guided play** each have their own benefits for supporting learning goals, for example, guided play might support cognitive skills especially well, but creativity might best be supported in free play opportunities
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Learning through play closes the learning gap for disadvantaged students



- Learning through play benefits children across the globe, across different groups including socioeconomic groups as well as children with **different developmental and educational needs**
- Opportunities for playful learning can be created for everyone and in everywhere – using all sorts of materials
- Playful learning supports inclusion of marginalized children, and can **support children to reach their full potential** where more traditional models of learning might be inaccessible
- The broad impact of learning through play means that everyone can benefit – including those who have difficulties with cognition, social interaction and communication, or emotional development
- **Agency and adult facilitation** are key to creating inclusive playful learning experiences that have positive impacts on children

Play and Neuroscience

Joy invokes a state of positive affect that enables many higher cognitive functions.

White paper

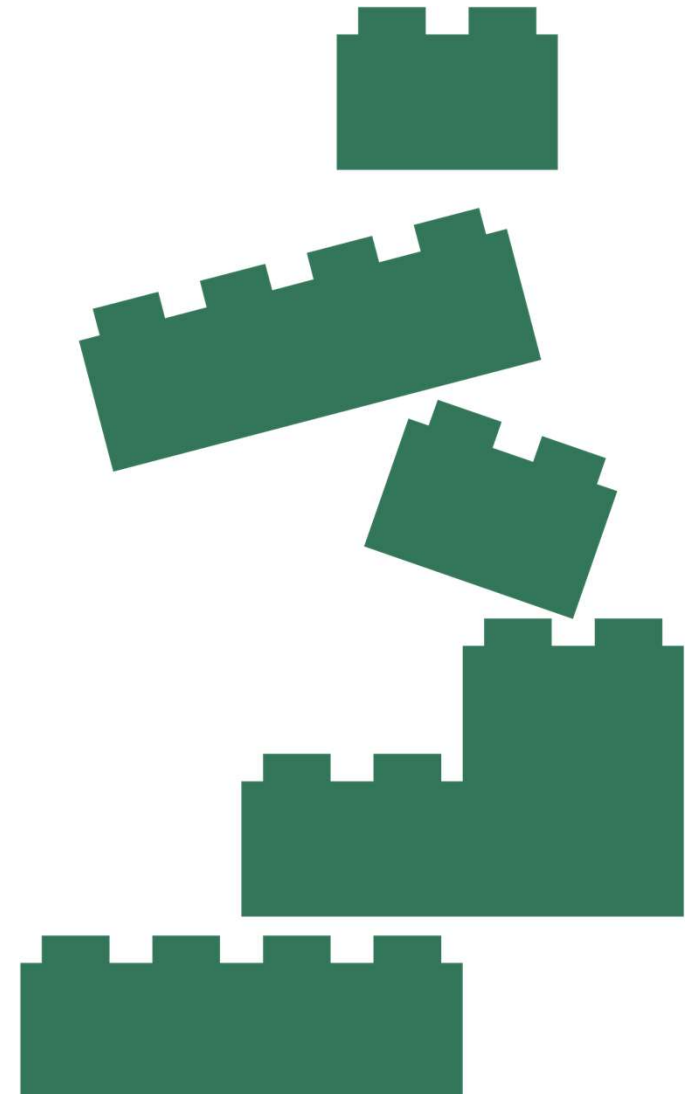
Neuroscience and learning through play: a review of the evidence



- Play is fun. When we have fun, dopamine is released. Dopamine helps **attention and concentration, creativity, stress regulation, memory, mental shifting**; all of which are helpful for learning.
- Play is actively engaging. When children are engaged and immersed in an experience they have chance to use and develop their **executive functioning skills**.
- Play is iterative, requiring problem solving, perseverance, **cognitive flexibility and creativity**.
- Play is socially interactive. Playful interactions with peers develops **language acquisition, cooperation, social learning and self-regulation**.
- Play is meaningful. Meaningful experiences develop **neural pathways** and encourage transfer of knowledge from one domain to another.

Play is fantastic to support children who might...

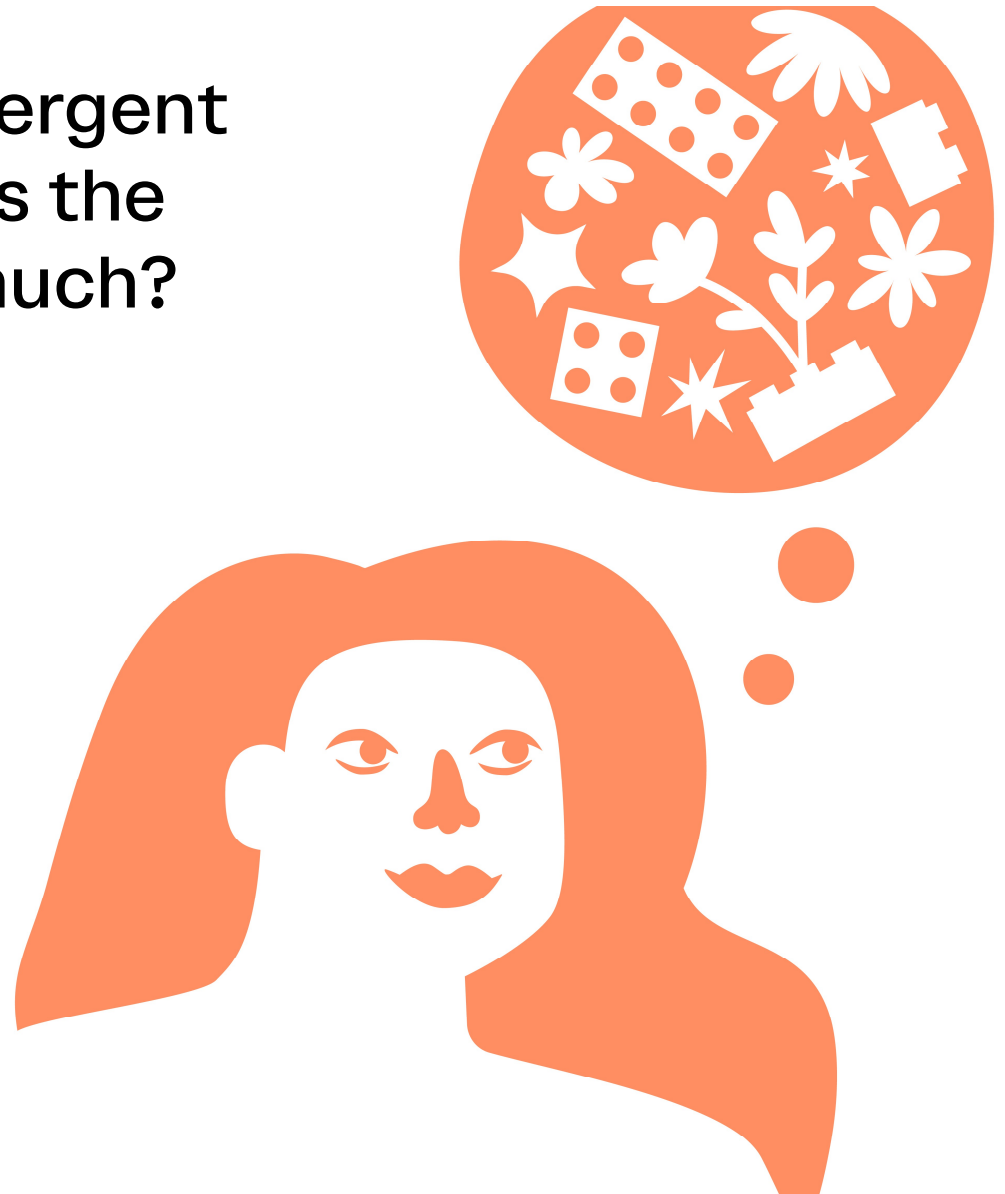
- Face challenges with social interaction, communication and emotional wellbeing
- Have high anxiety in social situations (especially since the pandemic)
- Experience low self-esteem, social isolation or bullying
- Feel lonely, isolated or excluded
- This may be especially true for neurodivergent children, children with mental health difficulties, children with particular life experiences or who face a range of societal barriers



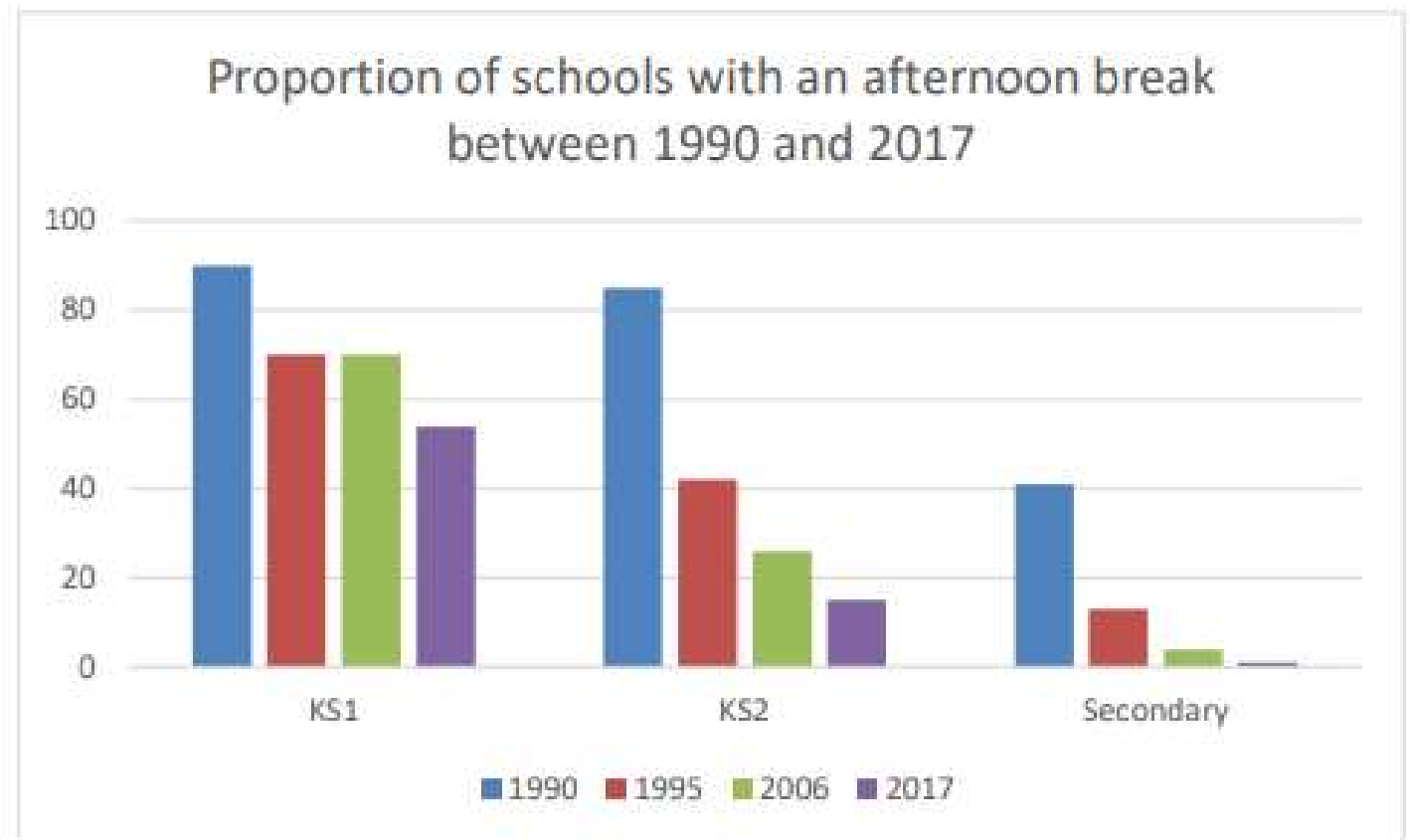
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Are we enabling neurodivergent learners to succeed? Does the curriculum demand too much?

- Rigid curriculum (too much to cover, too little time)
- Over-assessment
- Opportunities for play reduce as children progress through key stages
- Not enough social and emotional learning
- Tabletop learning emphasized
- Little agency in learning



The decline of playtime in UK schools



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Time to reflect...

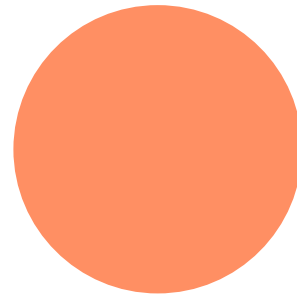
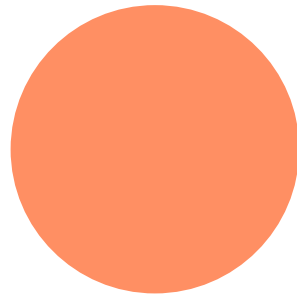
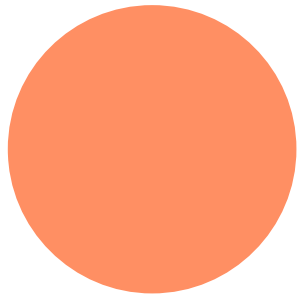
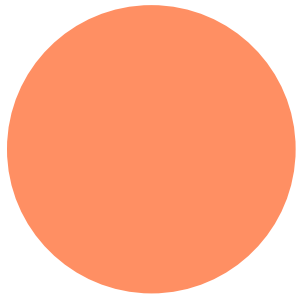


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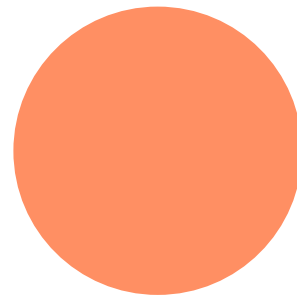
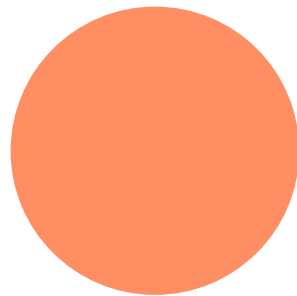
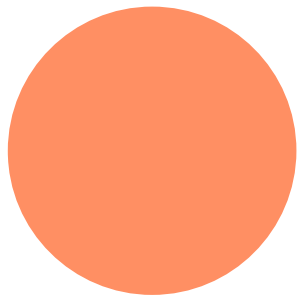
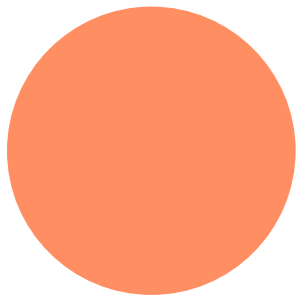
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What is the solution? What can we do as EPs?



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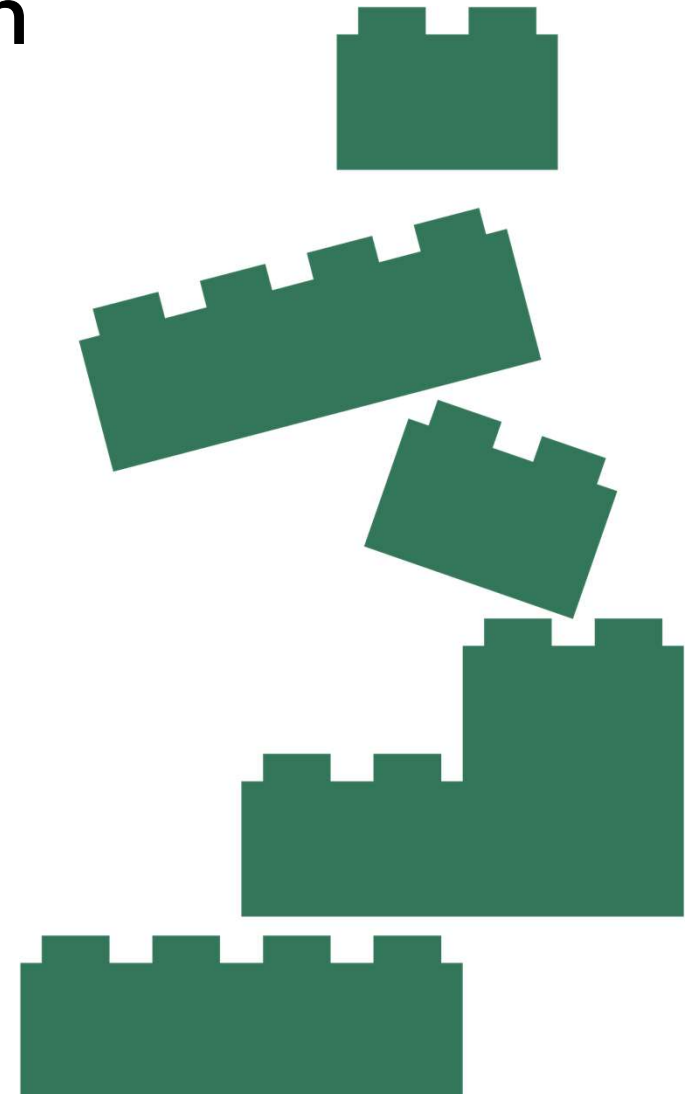
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1. Encourage playful learning in schools

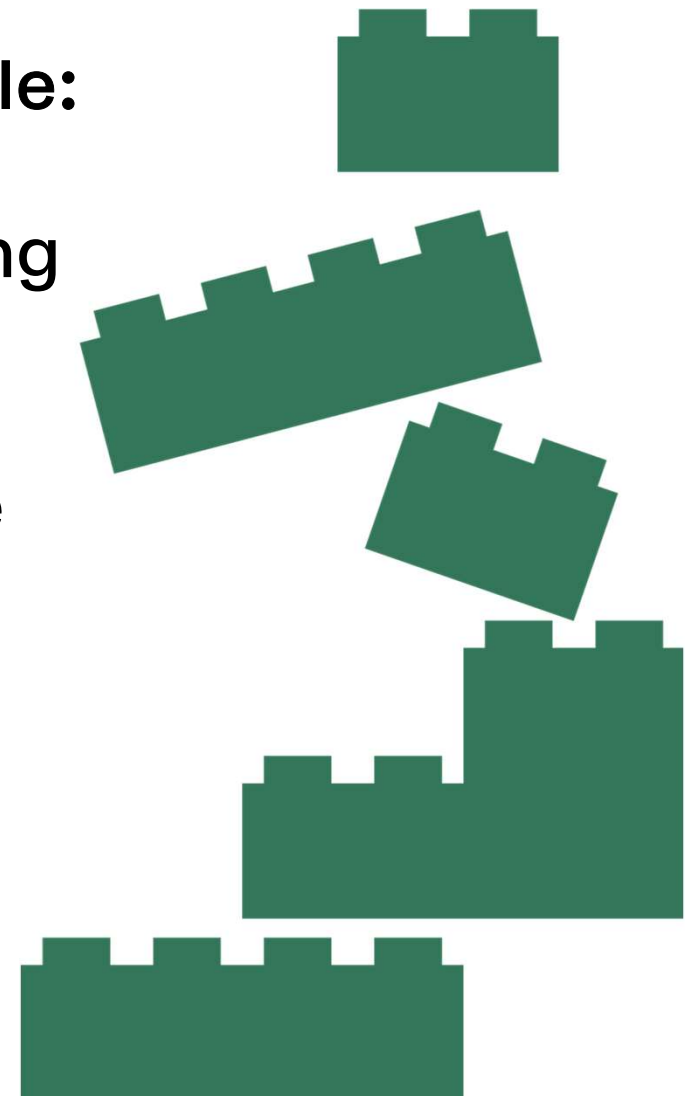
- Put play on the agenda
 - Systemic level discussions
 - Training for schools
 - Discussions in consultations
 - Recommending play-based approaches and access to playful learning in EHCPs
 - Put play on the agenda
 - Signpost to free and accessible activities (schools and parents)
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2. Incorporate play into our direct work with children and young people:

- Play reduces anxiety about meeting an unfamiliar professional, and encourages active engagement
 - Play together with a toy they have chosen
 - Build alongside a child
 - Build your ideal school
 - LEGO Six Bricks activities/DUPLO Playbox
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3. Help schools to improve play experiences for children

- Do children have agency in playful experiences/interventions?
 - Child's voice should be central
 - Are break and lunch times enabling affirmative play?
 - Looking at play based programmes- to what degree are the 5 characteristics of learning through play present? Could they be strengthened?
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I'm curious as to how Brick Clubs have been adapted to be Neurodivergent-Affirming, given the issues with Lego Therapy in that it's being rooted in achieving neuronormative communication

Off the shelf, stick it on their IEP, tick box, no thought, job done 🙄

Why do schools throw Lego Therapy at every autistic person regardless of their issues?

I am well aware of why schools do it and why it is actually an inappropriate intervention for many autistic children. It isn't the tool (ie the Lego) it is the ableist administration of the intervention.

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Because it a box they can tick. But if it isn't run by someone who has been trained - it's not Lego therapy- it's just playing with Lego.

Is it me or do some in SEND think the sum total of Autism support is fidget spinners and lego therapy?

“Traditional” LEGO®-based therapy

The Brick-by-Brick® Programme

Anyone can do it. Training usually focuses on methodology and structure of sessions, rather than playful facilitation skills

Focuses on developing playful facilitation skills in professional facilitators

No/little supervision for facilitators

Mentoring, updated resources, and ongoing support

Rigid, structured and adult led (e.g. 3 roles, 15 minutes each), sessions last one hour

High levels of child agency, enabled through skillful facilitation

Skills development- language, turntaking, social interaction skills taught and practised

Attendance develops confidence and a sense of belonging. Skills develop through play

Usually autistic children

Everyone is welcome in Brick Club

Created by Dr Dan LeGoff, and cascaded

Co-created with neurodivergent adults and children, and Learning through Play specialists

AT- Autism Independent Evaluation

- Independent evaluation in 7 countries.
- 92% of children enjoyed or really enjoyed Brick Club.
- 77% said children had increased confidence.
- 85% said children felt more comfortable in a group.
- 71% saw improvements in friendships and peer relationships.
- 71% reported better communication skills.



Brick 
 Club

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“When I’m at Brick Club, everyone is different so it helps with stress or anxiety” – Ben 10yrs

“It seems students never miss school on brick club days” – Kevin McKee, STEM teacher, US



“When you make friends at Brick Club you know them for the rest of your life.” – Thomas, aged 10, New Zealand

“You get to work with other people and you may be able to find new friends” – Brick Club member

“I always get smiles and waves as they leave. Even if they come in and are not happy, they will be much more cheerful leaving” – Educational Support staff member, UK

“Me gusta mas que la tablet” – Isaac, aged 8, Mexico



“This is one of the best social development tools I have used. It is amazing to be able to work through social interactions in real time doing a real activity” – Teacher in the UK

“I am more creative” – Brick Club member

“Some of the developments we have seen are active listening, language learning, and helping each other to problem solve. The group consistently works together to solve problems” – Lisa, Speech and language therapist, Kenya

“Brick Club is the best programme that I have seen, that really works! As the kids learn, so do we and I feel that we have all made improvements” – Brick Club Facilitator, US

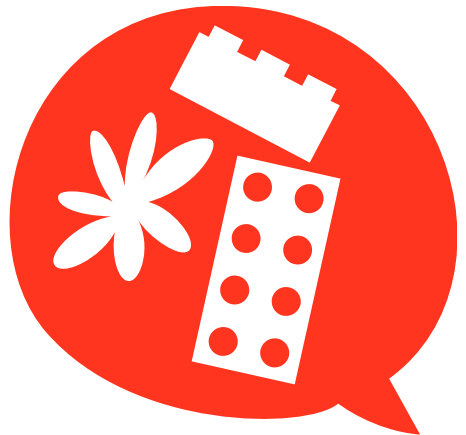
“What we’ve seen from Ben, is that it’s changed him completely. He’s a lot more confident” – Alison, parent

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Questions



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Find out more..

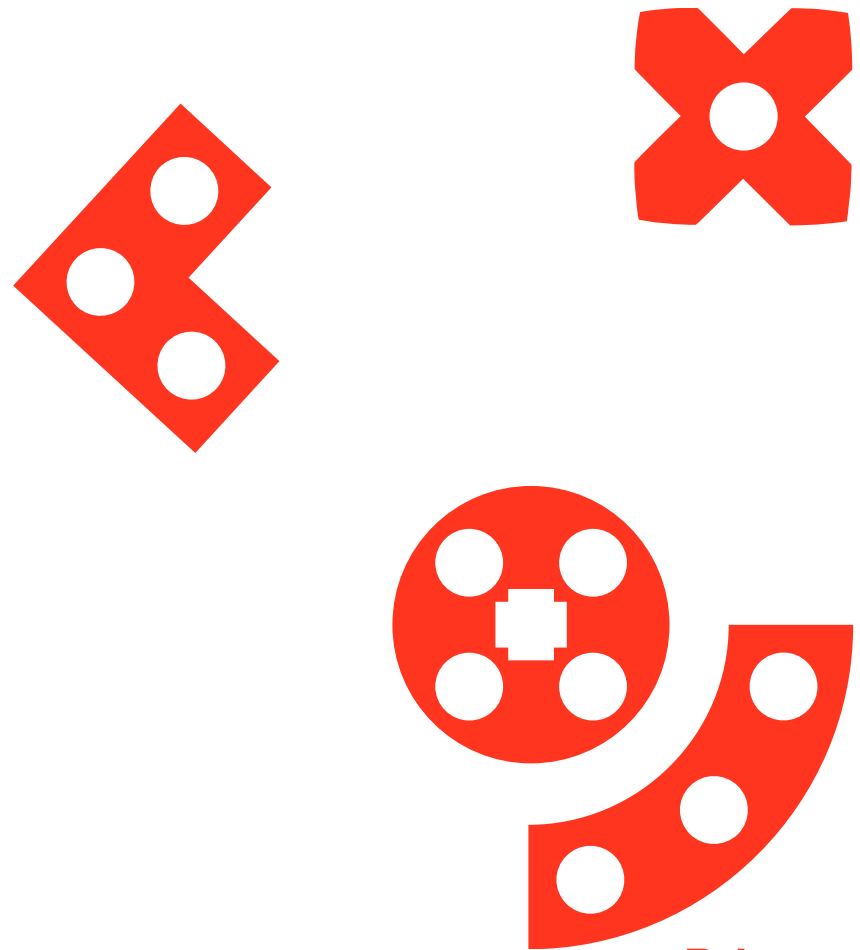
<https://playincluded.com>

hello@playincluded.com

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Free Brick by Brick
webinar

<https://webinar.playincluded.co.uk/>



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Free resources:

LEGO Playbox:

<https://www.playscotland.org/wp-content/uploads/LEGO-Play-box-activity-booklet.pdf>

DUPLO Playbox:

<https://education.theiet.org/media/5551/duplo-activity-booklet-pdf-1-140kb.pdf>

LEGO Six Bricks:

https://cms.learningthroughplay.com/media/jrfpg4tx/sixbricks_ok_print.pdf

Family activities: <https://www.lego.com/en-gb/family/activities>



Our free resources:

Play At Home: <https://playinclud.com/en-GB/for-home>

Building Friendships: <https://playinclud.com/en-GB/for-schools>



References

Baines & Blatchford (2019). A follow up survey of break and lunch times in schools. Nuffield Foundation.
<https://www.nuffieldfoundation.org/project/a-follow-up-survey-of-break-and-lunch-times-in-schools>

Crittenden and Gray (2024). The importance of play-based learning beyond EYFS. Rethinking Curriculum.
<https://my.chartered.college/research-hub/the-importance-of-play-based-learning-beyond-eyfs/>

Learning through play and the value of holistic skills through childhood:
<https://cms.learningthroughplay.com/media/qjndcaea/holistic-skills.pdf>

Learning though play: increasing impact, reducing inequality <https://learningthroughplay.com/explore-the-research/increasing-impact-reducing-inequality>

Mardell, B., Lynneth Solis, S., & Bray, O. (2019). The state of play in school: Defining and promoting playful learning in formal education settings. International Journal of Play, 8(3), 232-236. <https://doi.org/10.1080/21594937.2019.1684157>

Neuroscience and learning through play: a review of the evidence: https://cde-lego-cms-prod.azureedge.net/media/zbcd21td/neuroscience-review_web.pdf

Parker & Thomsen (2019). Learning through play at school: A study of playful integrated pedagogies that foster children's holistic skills development in the primary school classroom. LEGO Foundation white paper.
<https://cms.learningthroughplay.com/media/nihnouvvc/learning-through-play-school.pdf>

Further reading about LEGO brick-based therapy

Barr, A., Coates, E., Kingsley, E., de la Cuesta, G. G., Biggs, K., Le Couteur, A., & Wright, B. (2022). A mixed methods evaluation of the acceptability of therapy using LEGO® bricks (LEGO® based therapy) in mainstream primary and secondary education. *Autism Research*, 15(7), 1237-1248.

Evans, V., & Bond, C. (2021). The implementation of Lego®-Based Therapy in two English mainstream primary schools. *Journal of Research in Special Educational Needs*, 21(2), 111-119. <https://doi.org/10.1111/1471-3802.12504>

Lindsay, S., Hounsell, K. G., & Cassiani, C. (2017). A scoping review of the role of LEGO® therapy for improving inclusion and social skills among children and youth with autism. *Disability and health journal*, 10(2), 173-182.

Wright, B., Kingsley, E., Cooper, C., Biggs, K., Bursnall, M., Wang, H. I., ... & Le Couteur, A. (2023). I-SOCIALISE: Results from a cluster randomised controlled trial investigating the social competence and isolation of children with autism taking part in LEGO® based therapy ('Play Brick Therapy') clubs in school environments. *Autism*, 27(8), 2281-2294.

