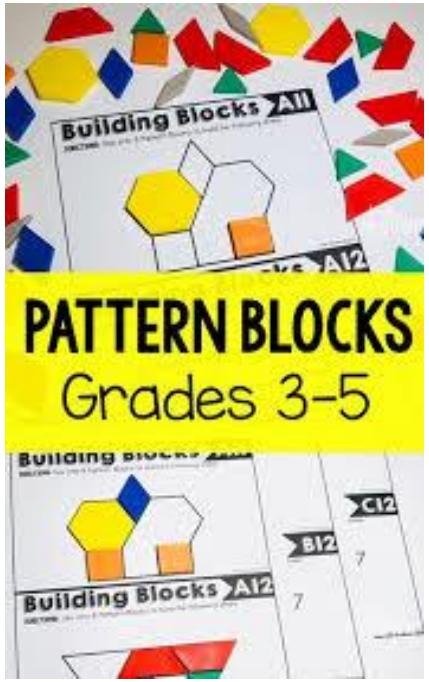
LSU | Early Childhood Education Institute

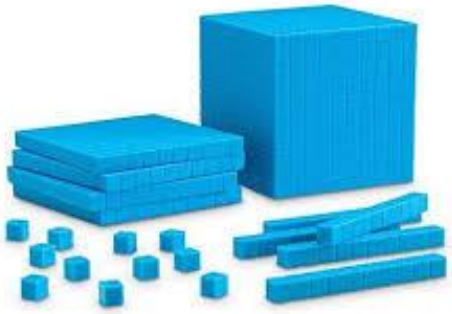
Enhancing Learning Outcomes in Primary Education Through the Use of Block Play

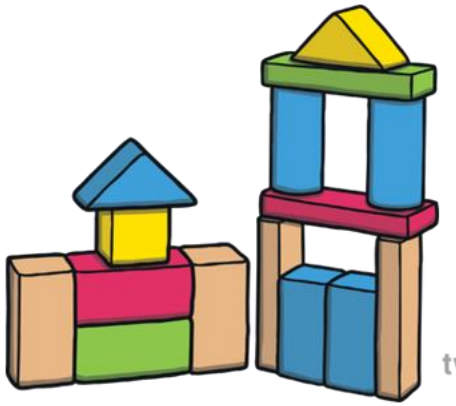
LSU

Where are the Blocks? A case for more block play for children 6 and up.

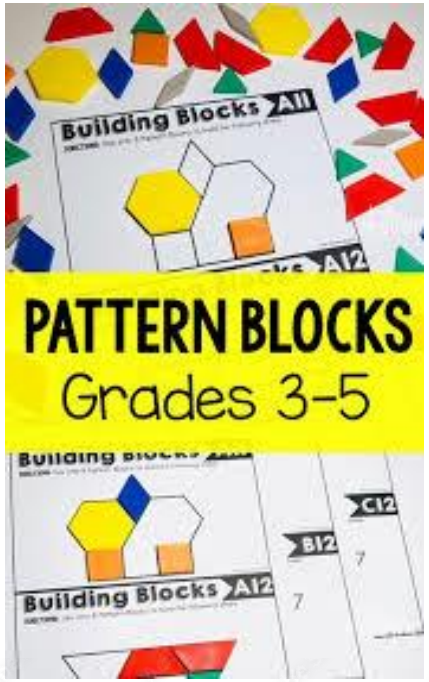
Types of Blocks

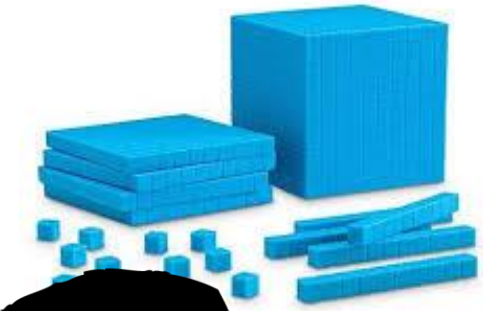




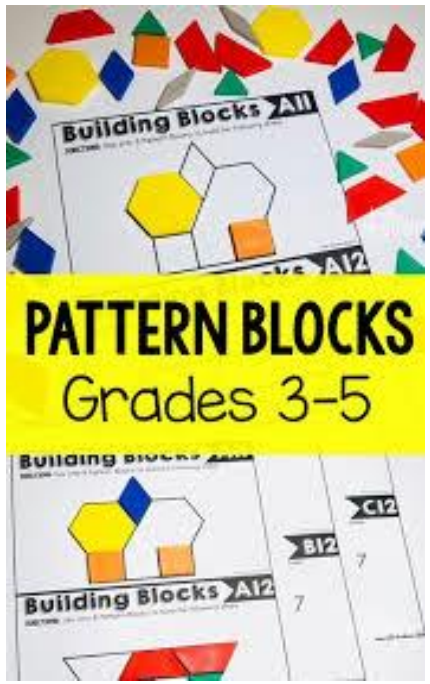


In Primary?


Building Blocks A11
A12
PATTERN BLOCKS
Grades 3-5
C12
B12
Building Blocks A12




Why?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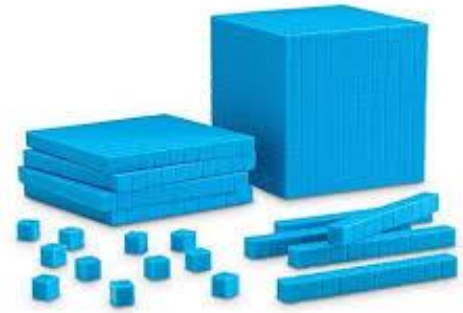
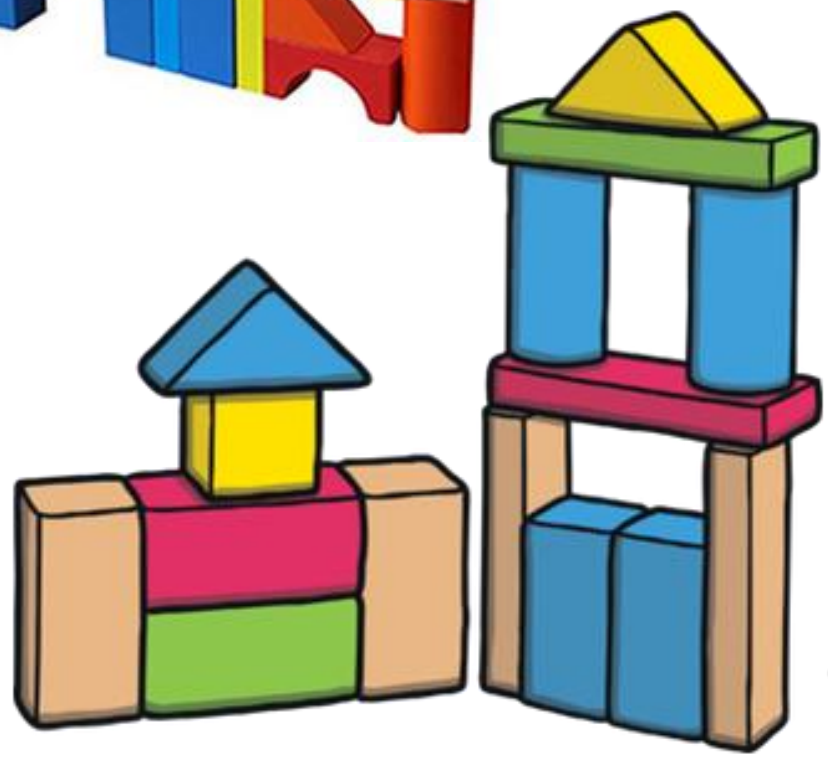
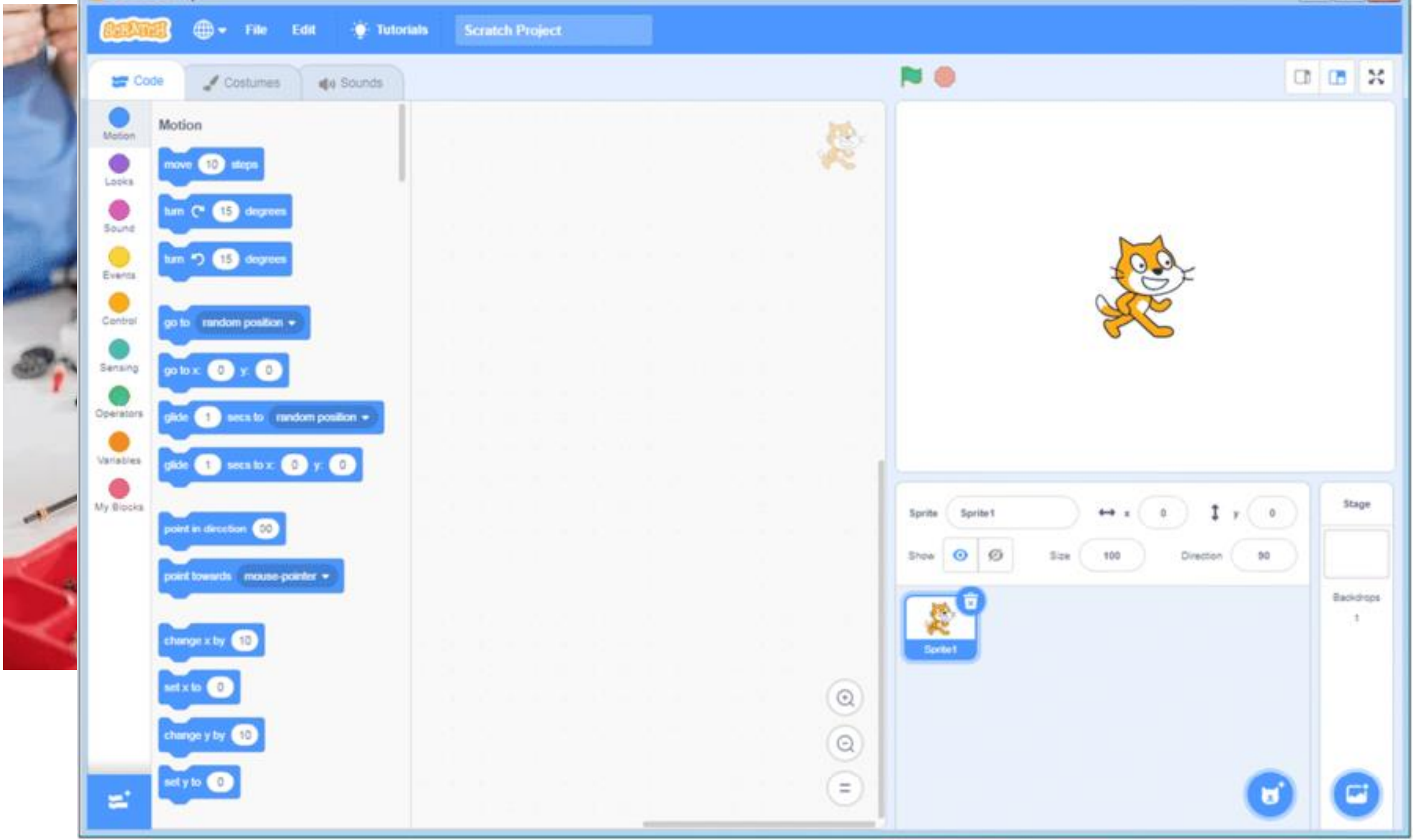





Scratch Desktop
File
Edit
Tutorials
Scratch Project
Code
Costumes
Sounds
Motion
Looks
Sound
Events
Control
Sensing
Operators
Variables
My Blocks
Motion
move 10 steps
turn 15 degrees
turn 15 degrees
go to random position
go to x: 0 y: 0
glide 1 secs to random position
glide 1 secs to x: 0 y: 0
point in direction 90
point towards mouse-pointer
change x by 10
set x to 0
change y by 10
set y to 0
Sprite
Sprite1
x
0
y
0
Show
Size
100
Direction
90
Stage
Backdrops
1
Sprite1

Research on Blocks

Enhances Spatial Reasoning: (Casey et al., 2008; Casey & Fell, 2018; Lombardi et al., 2019).

Promotes Mathematical Thinking:. Schmitt et al., 2023; S. A. Schmitt et al., 2018

Supports Problem Solving and Critical Thinking: (Verenikina et al., 2010),

Encourages Collaboration and Communications (Gil-Doménech & Berbegal-Mirabent, 2019; Isabelle et al., 2021; Webster-Stratton, 1999).

Fosters Creativity and Imagination: Nicolopoulou et al., (2010)

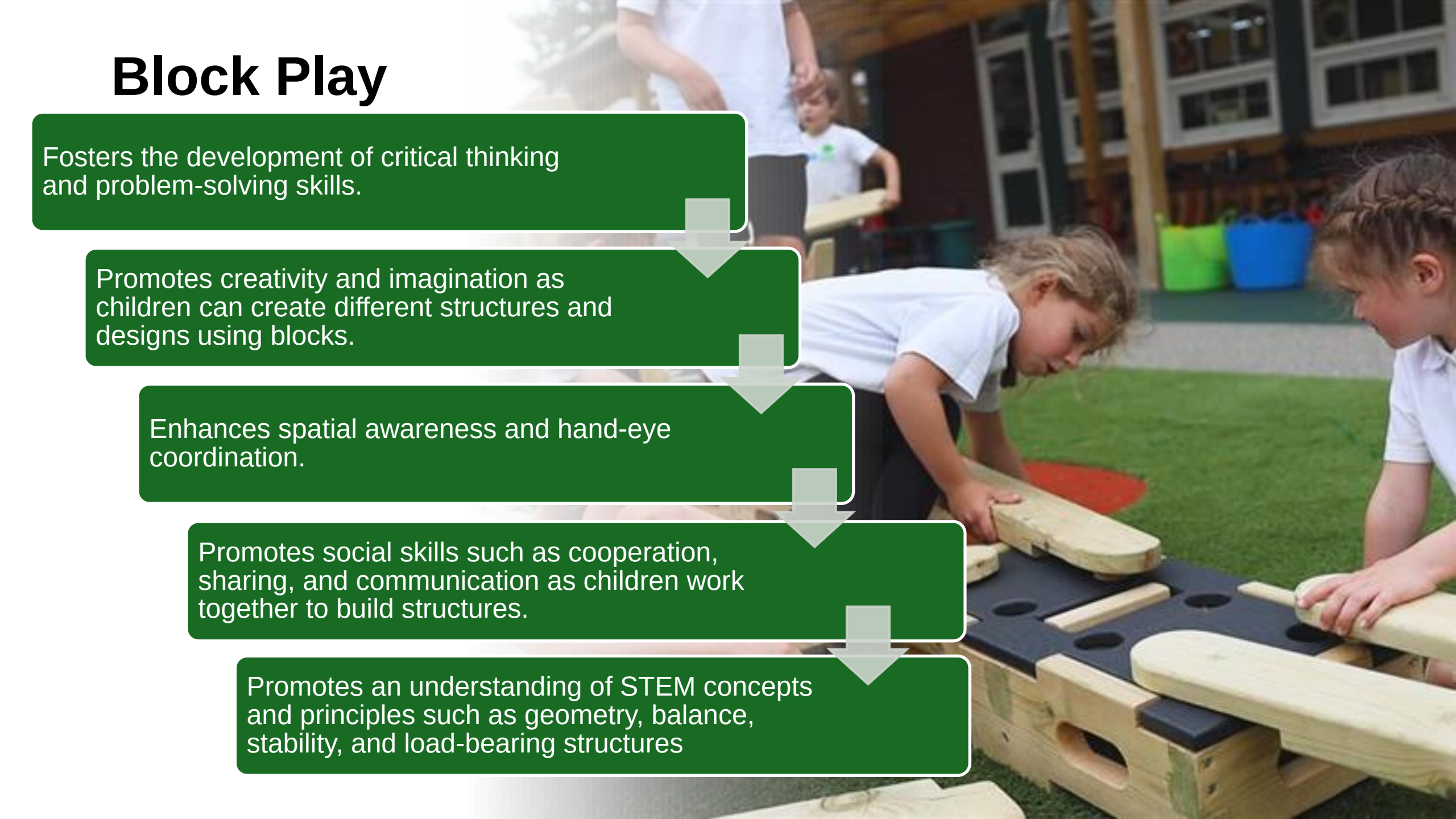
Improves Fine Motor Skills and Hand-Eye Coordination: (Austin, 2022; Gandotra et al., 2023; Oh et al., 2023).

Enhances Engagement and Motivation: (Gonzalez et al., 2024; Tippett & Milford, 2017).

Supports Diverse Learning Styles: (Gardner, 1999),

Block Play

- Fosters the development of critical thinking and problem-solving skills.
- Promotes creativity and imagination as children can create different structures and designs using blocks.
- Enhances spatial awareness and hand-eye coordination.
- Promotes social skills such as cooperation, sharing, and communication as children work together to build structures.
- Promotes an understanding of STEM concepts and principles such as geometry, balance, stability, and load-bearing structures



Why are they missing in primary grades??

Blocks are almost completely absent from upper grades

Reason #1

Blocks are an informal material that rely on children's capacity for play and creativity. There are not Objectives, lesson plans, standards or assessments which are so prevalent and “essential” in schools for older children.

Lozon and Brookes (2019)

Yet, play, science, and engineering are interconnected, essential ingredients of quality educational programs throughout the age span. . . teachers can introduce into their pre-school and elementary school classrooms vetted “playful” curriculum that, with teacher scaffolding using crosscutting concepts, fosters the development of students’ science and engineering practices. (P 88-89)

Reason #2

Emphasis on Standardized Testing

- There has been a significant shift towards standardized testing and accountability in education systems worldwide.
- This shift often leads to a more rigid curriculum focused on measurable academic skills and knowledge that can be directly assessed through tests.
- Consequently, activities that are less directly linked to testable outcomes, like block play, may receive less emphasis or be phased out in favor of more traditional, academically oriented instruction.

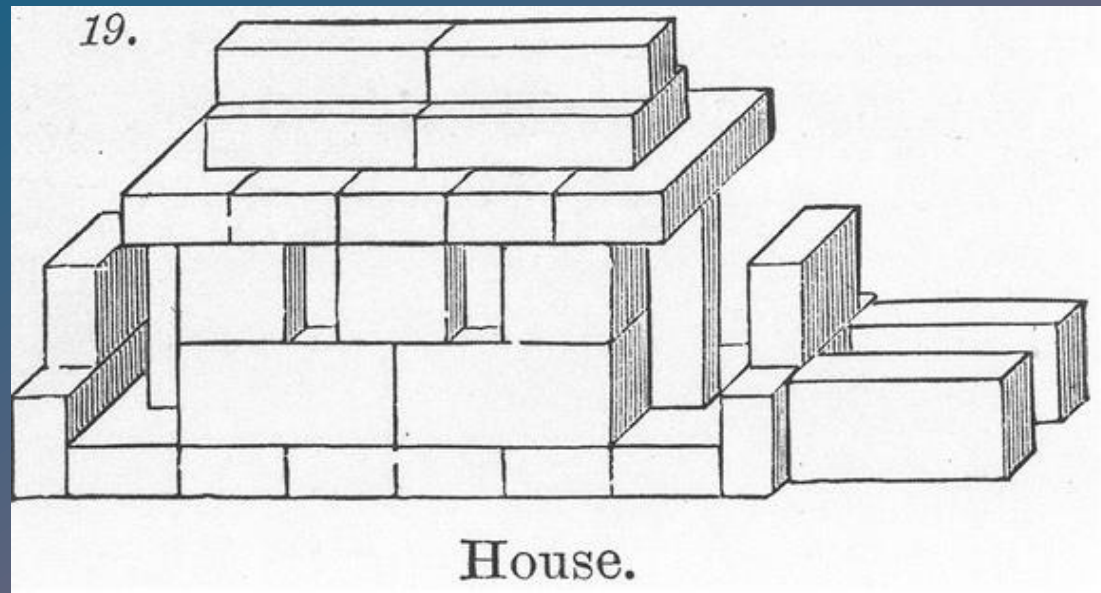
Reason #3

Technological Integration

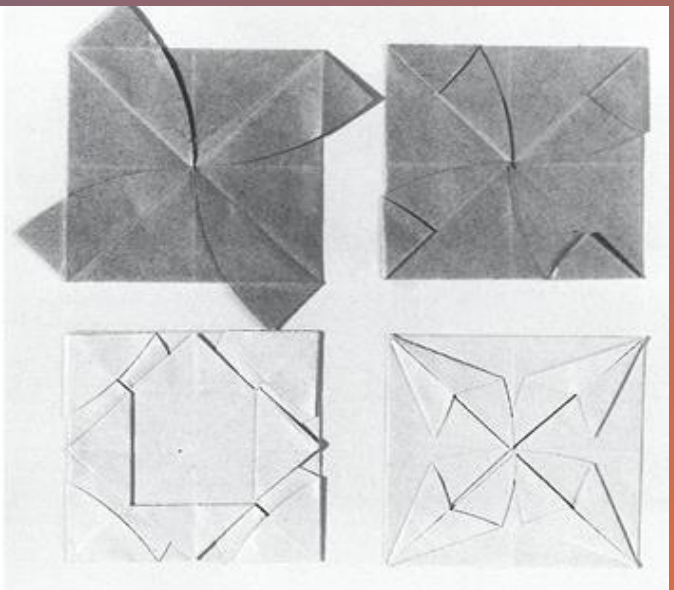
- With the increasing integration of technology into education, there's a push towards digital learning tools, including educational software and applications that target STEM skills.
- While these technologies offer new ways to engage students in learning, they may also inadvertently reduce the opportunities for hands-on, tactile learning experiences like those provided by block play.

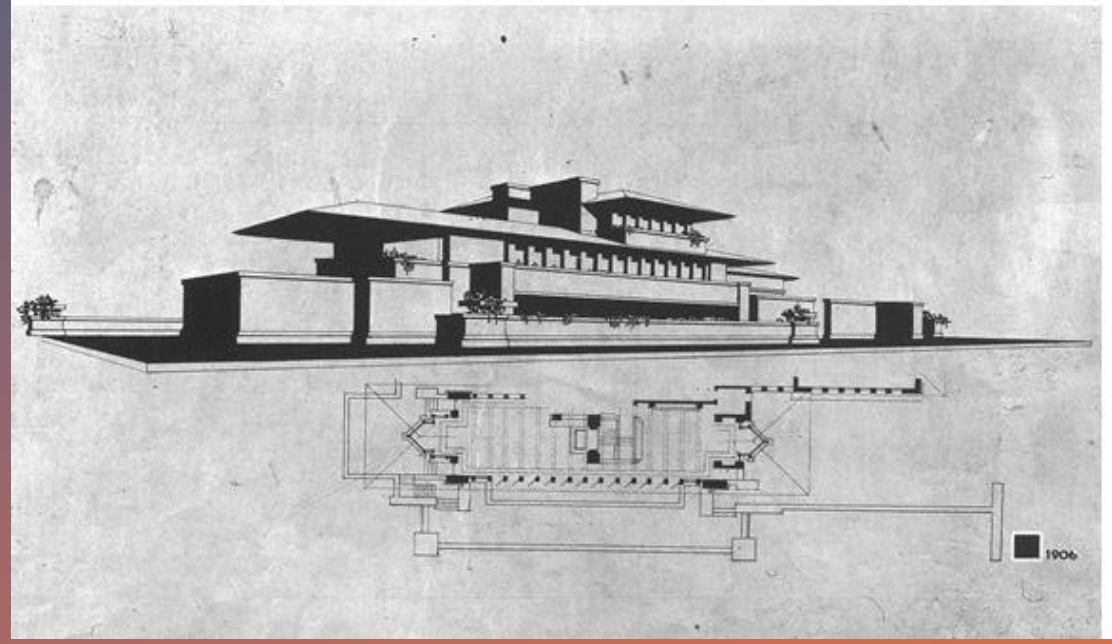
Froebel and Design Education

- Froebel blocks are used to teach architects and design students at MIT, Harvard and many other schools

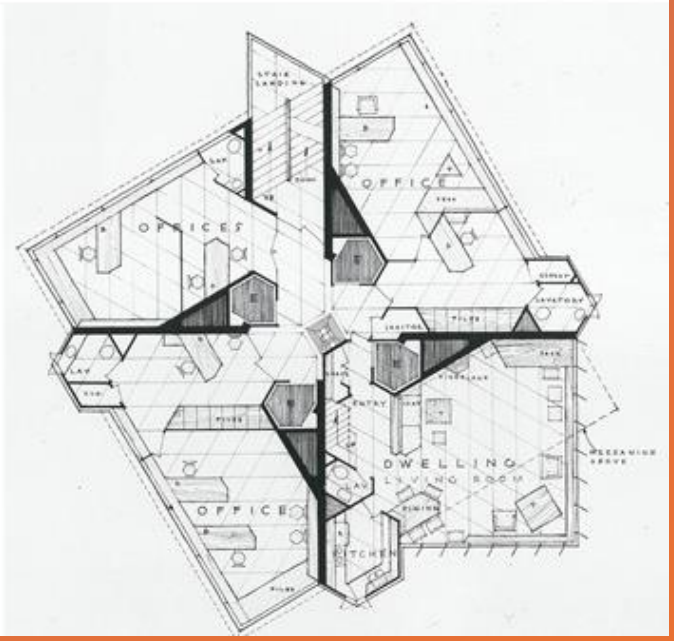


Fröbel Gifts
#6 and #18





Wright



STEM

- ***Engineering play*** *is a framework for understanding young children's block building as an engineering design process. that parallels the materials-based problem-solving of adult professional. The engineering design process is a theoretical model of the decision-making processes adults engage in as they create and transform ideas into functional products. It involves establishing and solving a problem through object manipulation and construction, meeting goals, developing plans and prototypes, trial-and-error testing and evaluation, and communicating various thoughts and approaches* ***(Gold et al., 2020) P. 803***

Play at Risk

- However, even Preschool and Kindergarten classrooms are not safe from having blocks taken out of their environment. In the forward to the 2009 report from the Alliance for Childhood, **David Elkind** wrote that *early childhood education over the last half century has become a downward extension of schooling. We have seen this have an especially drastic impact on Kindergarten*.

Questions?