EXPLORATORY FAMILY STEM PLAY AT THE LIBRARY

YPSILANTI DISTRICT LIBRARY

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Play is central to how kids learn, think, and build relationships. When children play, they are exploring ideas, constructing knowledge, and developing higher order thinking skills that form the foundation for later academic success.

adapated from Tina Sykes, *What is Play-Based Learning?*

How is play-based learning unique?

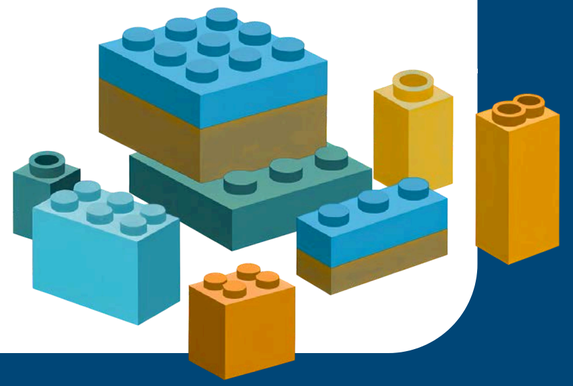
- Intentional--requires thoughtful planning
- Supports whole-child development
- Can be free play or guided play--both are important!
- Supports academic success

Why play at the library?

- Build higher-order thinking and problem-solving skills
- Help with reading and language development
- Increase self-regulation and perseverance
- Build social skills, such as cooperation, empathy, turn-taking, and negotiation
- Develop kids’ creativity and imagination
- Increase physical development through movement and coordination

Two types of play-based learning

Free Play = independent exploratory play areas



Library staff...

- Curate materials
- Observe and refine materials
- Make sure everyone is safe

Kids...

- Choose what to play
- Choose how to play with materials

Adults with kids...

- Can join in and play as equals or observe

What play for bigger kids looks like at the library

Play-based STEM activity area planning

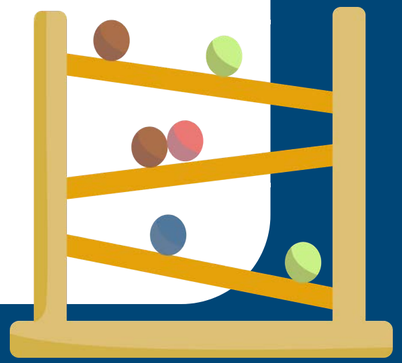
- Activities are fun and invite exploration
- Materials encourage cooperation and group play
- Activities are out long enough for experimentation and repeated learning opportunities
- Designed for child-led engagement
- Might be adapted after observing how kids engage with materials

STEM Play Ideas

Free Play Themes for the Youth Department

- Balance--yoga poses, Keva planks, stepping stones
- Gravity car races--Legos, Duplos, cars, and ramps
- Urban planning--blocks, maps, wooden trains or buildings
- Light--light table or light box, translucent blocks, tangrams, or magnatiles
- Construction--SuperSpace Tiles or smaller blocks of any type

Guided Play = play at library programs

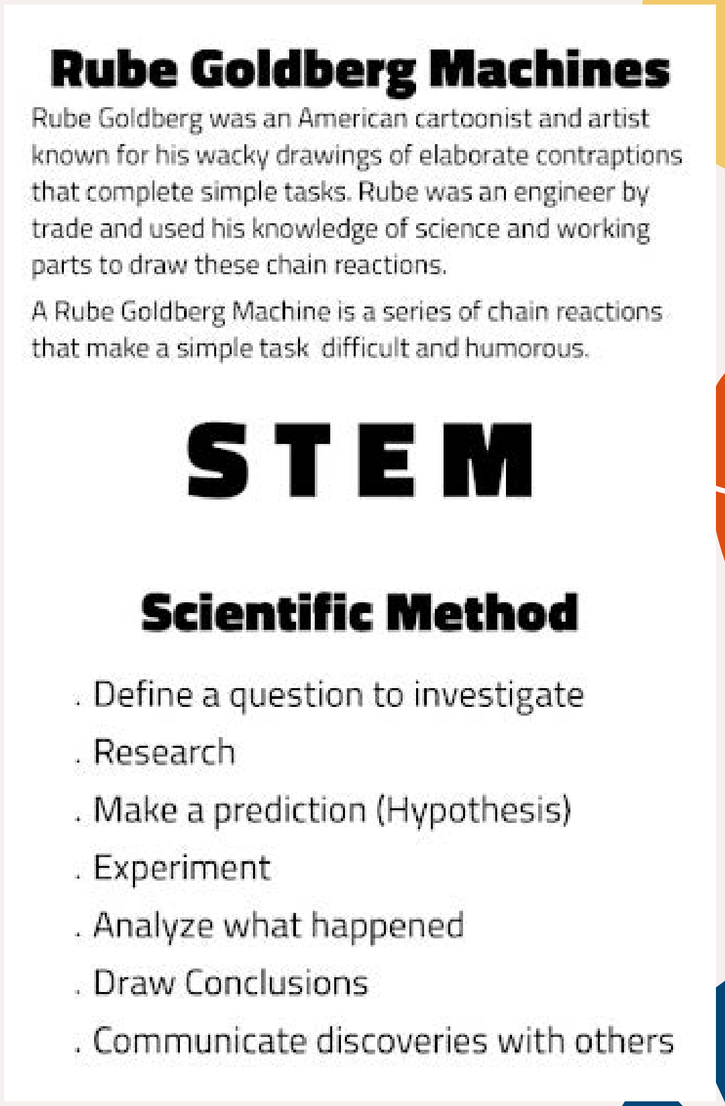


Library staff...

- Curate open-ended materials for kids to explore
- Create challenges to complete with the supplies
- Ask questions, introduce new ideas
- Create a sense of community
- Offer vocabulary and guidance
- Model play, risk taking, and experimentation
- Help kids navigate emotions and give encouragement
- Assess/document learning

Guided play STEM outline

- Introductions/icebreaker *3 minutes*
- Breifly introduce the topic with video or photos *2-3 minutes*
- Show the supplies and explain the challenge *5 minutes*
- Remind kids they are scientists *2 minutes*
- Guided play time *40-45 minutes*
- Share out and recap what was learned *5-8 minutes*



https://www.youtube.com/watch?v=uhOlyTJcvH8

Plan with intention

Set Goals

What do you want kids and families to learn?

Choose Your Words

Guide play with questions, offer suggestions, share new vocabulrary, encourage perseverance.

Set the Vibe

Create a welcoming, safe, collaborative environment.

Evaluation

What will you observe, record, note as signs of success?

Curate Materials

Choose materials with plenty of room to experiment, make mistakes, and try again.

New Experiences

Provide materials that kids might not encounter elsewhere, or can be used in new ways.

STEM Play Ideas

Guided Play at Programs

- Flight--paper airplanes, parachutes
- Chain reactions--Rube Goldberg Machines, domino toppling
- Simple circuits--cooper tape flashlights, simple switches, vibrobots
- Coding--with robots, Scratch, Legos, or unplugged activities
- Design Challenges--bridges, ramps, paper rollercoasters, Keva planks, outdoor forts
- Water play--pvc pipe, plastic boxes, buckets, measuring cups
- Nature--explore outside, invite naturalists from parks, use loose parts to build and play
- DIY puzzles, toys, and fidgets
- Board Games--play or design your own

Intentional Planning

When planning activities, specif cally think about what you want the children to learn, how will you set the stage, what conversations or vocabulary you can introduce, and what teaching strategies you will use to deepen the play experience and foster the and outcome you desire.

Creating Challenges

Think about how you can extend play by adding to it or by giving the children a challenge that will bolster their learning through play.

Setting the Environment

Do you intentionally plan your environment? Do you think about furniture arrangement, access to materials, displays and the schedule of the day? Does the environment reflect the learning happening in your room?

Helping Children Solve Problems

When challenges arise, use probing questions, model and help guide the child to problem solving solutions.

Asking Guiding Questions

Prompt children to think and talk about their ideas. Asking guiding questions extends children's thinking while offering open-ended support.

Giving Specific Feedback

Offer children positive, specific feedback in a timely manner. Focus on one or two comments at a time. Asking for feedback from children in return increases their sense of importance and encourages critical thinking.

Encouraging Effort & Persistence

Congratulate children's efforts throughout the process and not just for a completed project.

Observing, Documenting & Assessing

Use ongoing observations and documentation to help assess children's growth and development.

Read about play-based learning

- What is Play Based Learning? Tina Sykes, Teaching Strategies
- Embracing Learning Through Play Harvard University
- Play-Based Learning Tips University of New Hampshire

Find STEM play activity ideas

- YDL STEM Play Catalog
- Exploratorium STEM play ideas
- Learning Through Play Tips and Activities
- Playful Activities for 8-12 year olds Harvard University

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THANK YOU!

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