

### LITTLE SCIENTISTS:

#### BUILDING EARLY STEAM SKILLS

STEAM learning is based on making observations, asking questions, making predictions, exploring, and reflecting. STEAM skills help us analyze information, think creatively, and solve problems. We use STEAM skills every day, from packing a car trunk to predicting how another person will react to a specific event.

#### THE TAKE HOME:

1. STEAM stands for Science, Technology, Engineering, Art, and Math. These topics are linked together because they rely on a common focus and approach.
2. STEAM is about asking questions and trying to figure out how things work.
3. Children naturally use STEAM skills to learn and explore their surroundings and make sense of the world.



#### WHAT DOES RESEARCH SAY?

- STEAM stands for Science, Technology, Engineering, Art, and Math. These topics are linked together because they rely on a common focus and approach. They all require gathering and using evidence to gain knowledge, create new things, and solve problems. **STEAM is about asking questions and trying to figure out how things work**, not about what facts you know.
- Infants and young children naturally use these STEAM skills to explore and learn about the world through play. Children act like scientists - they make observations and run experiments to see what will happen. In fact, more than half of children's natural playtime is spent playing a science or math-related activity.
- Research indicates that early STEAM skills provide a strong base for school readiness.



#### WHAT DOES IT LOOK LIKE?

- Children learn by exploring on their own, but they also depend on adults to guide their learning.
- You can help children enjoy STEAM by doing STEAM activities together. Early skills like creative thinking and problem solving establish the foundation for later learning and build confidence in STEAM areas.
- You don't need to know a lot about science or have special equipment to teach children about STEAM. Pay attention to what children are interested in—this is a great place to start! For example, a child might notice that his shirt got wet while he was washing his hands, and it feels heavier. Encourage the child to explore what types of things absorb water. Does a sponge or a block get heavier when you put it in water? Which one makes a better print on a piece of paper? Help parents practice asking open-ended questions like “Why might that be?” or “What else could we try?” Remember, STEAM is about asking questions and trying to figure out how things work – not which facts you know!
- Children naturally act like scientists. For example, an infant may predict that if she drops a toy, it will fall to the ground. She might then experiment with dropping different objects from different heights. Or, a child might explore different ways he can move his body patterns as he dances to music. He might try jumping to the beat of the music or moving his arms and legs in a coordinated way. Help parents recognize the observations, questions, and experiments their child does and think of ways to encourage their experiments and thinking.



## TRY THIS!

- Help children observe by asking, “What do you see?” Support curiosity by asking, “What do you want to know?” Extend children’s learning by saying, “What do you think will happen?” Support exploration by asking, “What should we try?” Help children reflect by asking, “What did you notice?” Encourage parents to notice and engage with what their children are exploring. Reflect on the kinds of STEAM play you observe in children and think about ways you can model STEAM skills in your interactions with families.
- Explore the outdoors and nature. You don’t need special equipment like microscopes to engage children in STEAM learning. Go outside or bring the outdoors inside! Nature is perfect for creative and active exploration and problem-solving. On home visits, help families find good spots to explore, whether it is the park down the street, or plants and trees around their home.
- Use materials that engage the senses. Explore with touch, smell, taste, sound, or sight. For example, bring different textured items on a home visit and have the child compare how objects feel. Observe which is rough, or squishy? After exploring, you might work together to create something new with the materials. This helps children use STEAM skills like making observations and creative thinking.

## LEARN MORE:

NEWS YOU CAN USE: EARLY SCIENCE LEARNING FOR INFANTS AND TODDLERS

<https://eclkc.ohs.acf.hhs.gov/sites/default/files/pdf/nycu-early-science.pdf>

COACHING CORNER: FULL STEAM AHEAD: USING PRACTICE-BASED COACHING TO SUPPORT THE TEACHING OF SCIENCE

<https://eclkc.ohs.acf.hhs.gov/video/full-steam-ahead-using-practice-based-coaching-support-teaching-science>

# CONNECTING AT HOME

## LITTLE SCIENTISTS:

### BUILDING EARLY STEAM SKILLS

STEAM stands for Science, Technology, Engineering, Art, and Math. Children use STEAM skills all the time when they wonder, explore, solve problems, and communicate. STEAM learning is based on making observations, creating, asking questions, and exploring. STEAM is all around us, ready to be discovered by young explorers.

#### USE YOUR SENSES

Explore with touch, smell, taste, sound, or sight. For example, help your child compare how objects feel. Which is rough, soft, smooth, or squishy? Together you can make observations about how something feels. After exploring, create something new with the materials. These skills are important for STEAM learning.

#### ASK QUESTIONS

Ask questions to guide your child's learning. Listen to their response. For infants, watch for their responses. Then expand upon it. It's ok if you don't know all the answers! It's not about right or wrong. The important thing is that you and your child observe, question, predict, explore, and reflect together.

#### EXPLORE TOGETHER

A key part of helping your child enjoy STEAM is to do STEAM activities together. Children learn from other people, and they enjoy learning with others. For example, consider ways to make music as a group. Working together makes activities more meaningful and fun!

#### LOOK OUTDOORS

Looking for STEAM inspiration? Try exploring outdoors! For example, you could ask "Do you see any birds? Let's see if we can find more! Where else might we see birds?" You don't have to go far to explore nature. If you live in a city, you can count bugs on the sidewalk or talk about the direction of the wind. You can also bring the outdoors inside by collecting leaves in the park.

