## DC Early Learning Standards

<table>
<thead>
<tr>
<th>Standards</th>
<th>Serve as guidelines that describe children's development across the birth to five years age range</th>
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<tbody>
<tr>
<td>Indicators</td>
<td>Show children's progress in gaining concepts, knowledge and skills within each standard</td>
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<tr>
<td>Examples</td>
<td>Describe what the standard looks like at a certain age or development level</td>
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<tr>
<td>Supportive Practices</td>
<td>Suggest ways teachers can help children learn the skills involved</td>
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<tr>
<th>TODDLERS</th>
<th>TWOS</th>
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<td><strong>Indicators</strong></td>
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<td>22a. Demonstrates curiosity and interest when observing and exploring objects</td>
<td>22a. Demonstrates curiosity and sustained interest in familiar, simple problems</td>
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**Example:**
- Push a toy boat down at the water table and watch the boat pop up with delight.

**Supportive Practices:**
- Provide children with varied objects that can be safely explored and time to explore objects in different ways.
- Reinforce children's curiosity by talking about and extending their explorations with objects (e.g., “Wow, the boat popped right back up after you pushed it down! Will it stay up?”).

22b. Communicates feelings about problems of interest (e.g., delight when solving a problem of interest or frustration when they cannot solve a problem of interest)

**Example:**
- Hold a square block, try to fit it in the different holes of a busy box or shape sorter and shriek in delight when it falls into the corresponding hole.

**Supportive Practice:**
- Model and talk about problem solving when children attempt to solve problems of interest (e.g., “Wow, that block is stuck in that tube. I think we can push it out. Which block do you think we can push through the tube?”).

22c. Explores various possibilities for solving familiar,
STEM with CLASS

Instructional Support

Educators support:

- Concept Development
  - Problem solving
  - Creative Thinking

- Quality of Feedback
  - Personalizing Feedback on Learning

- Language Modeling
  - Development of complex language
Learning Activities
Virtual Zoo Trips

• Sort animal cards and discuss characteristics.

• Read and discuss book about animals of interest.

• Go to virtual zoo. Observe and draw animal of choice.

• Compare two animals. The penguin has more/less legs than the ______.

• Sort the animal cards again according to a specific characteristic. Arrange into a chart.
Commonalities Among the Practices in Science, Mathematics and English Language Arts

Math

M1: Make sense of problems and persevere in solving them
M2: Reason abstractly & quantitatively
M6: Attend to precision
M7: Look for & make use of structure
M8: Look for & make use of regularity in repeated reasoning

M4: Models with mathematics
S2: Develop & use models
S5: Use mathematics & computational thinking

S1: Ask questions and define problems
S3: Plan & carry out investigations
S4: Analyze & interpret data
S6: Construct explanations & design solutions

E2: Build a strong base of knowledge through content rich texts
E5: Read, write, and speak grounded in evidence
E3: Obtain, synthesize, and report findings clearly and effectively in response to task and purpose
E4: Construct viable arguments and critique reasoning of others
M3 & E4: Construct viable arguments and critique reasoning of others
S7: Engage in argument from evidence

E1: Demonstrate independence in reading complex texts, and writing and speaking about them
E7: Come to understand other perspectives and cultures through reading, listening, and collaborations

ELA

Based on work by Tina Chuek ell.stanford.edu

NGSS@NSTA
STEM STARTS HERE
www.nsta.org/ngss
Enhance Block Play!

Snap pictures of block play and encourage academic conversation.

Pre-Build by starting with a simple structure and ask learners to add on.

Provide pictures of structures, designs and ask for modifications.

Put vehicles and figurines near blocks to prompt construction.

HPL15: Provide scaffolded supports.
HPL18: Use strategies to promote active student engagement.
Narrating Block Play

Narrate with academic language what you are noticing.

- *long, short, flat, sides, below, beside, on top/beneath, names of shapes/colors*

- “I saw you put all the long blocks on the bottom to hold up the short ones.”

Using the academic language that we want children to hear, what might a teacher say to narrate what is being observed on the right?
Outdoor Learning

Nature walks and outdoor play are learning and skill building opportunities and support positive mental health and social emotional well-being.

▪ What do you see?
  ▪ Drawing or pictures
  ▪ Class Instagram or virtual portfolio
▪ Reading books about nature
▪ Record the number of plants, animals, or living animals and create a chart or graph for reflection

HLP3: Collaborate with families to support student learning and secure needed services.
HLP19: Use assistive and instructional technologies.
Making Connections: Leaf Art

- Read the book “Leaf Man” by Lois Ehlert
- Create art from items found outdoor or outdoor cutouts
- Discuss what they made:
  - Is it a plant or an animal?
  - Why did you chose this leaf or this item?
  - How many leaves or items did you use?

HLP8: Provide positive and constructive feedback to guide students’ learning and behavior.
Connecting with CLASS

• Instructional Learning Formats
  ▪ Variety of Modalities (interesting, creative, hands-on materials)
  ▪ Effective Facilitation (effective questioning, teacher involvement, expanding children’s environment)
  ▪ Student Interest

• Instructional Support
  ▪ Brainstorming
  ▪ Planning & producing
  ▪ Connecting concepts
  ▪ Real-world integration
STEM Talk
Engaging in Argumentation

Argumentation is a process for reaching agreements or conclusions about explanations and design solutions. Learners are expected to use argumentation to listen, compare, and evaluate ideas and methods.

- Construct viable arguments and critique the reasoning of others. (MP.3)
- Attend to precision (MP.6)
- Express regularity in repeated reasoning (MP.8)
- Asking questions and defining problems (SP.1)
- Constructing explanations (SP.6)
- Engaging in arguments from evidence (SP.7)
- Obtaining, evaluating, and communicating information (SP.8)

HLP7: Establish a consistent, organized, and respectful learning environment
Instructional Strategies

Class Culture
- ✔ Sentence starters
- ✔ Collaborations
- ✔ Virtual Gallery Walk

Location Considerations
- ✔ Drawing Materials
- ✔ Manipulatives or Manipulative Bag
- ✔ Additional Supports

HLP15: Provide scaffolded supports.

Thumbs up if you agree! Thumbs down if you have a different idea!

Did anyone get the same answer a different way?

Can you explain what Lauren said in your own words?

My first step was…
STEM at Home
### Potential Challenges for STEM at Home

<table>
<thead>
<tr>
<th><strong>Formal Learning Environments</strong></th>
<th><strong>Boys vs. Girls</strong></th>
<th><strong>Parental Confidence</strong></th>
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<td>• Families believe STEM is for older children and is best taught formally in classrooms.</td>
<td>• Parents belief that math is more important for boys than girls.</td>
<td>• Lack of parental confidence in the ability to support STEM learning.</td>
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**Provide ideas for STEM at home**

**Build STEM identity**

**Ongoing support for parents**
STEM Around the Home

- Legos
- Small items such as wooden blocks, beads, pasta
- Empty Egg Carton
- Wooden Blocks
- Q-Tips, Straws, or Popsicle Sticks
- Boxes/ Geometric nets
- Deck of Cards
- Mirrors
- Virtual manipulatives
Family Resources

There are a number of supports for families to engage leaders and begin building STEM skills.

HLP3: Collaborate with families to support student learning and secure needed services.
HLP 18: Use strategies to promote active student engagement.
HLP19: Use assistive and instructional technologies.

Splosh Splash: Science Time Without Spending a Dime
Building STEM identity

• Model positive attitudes about STEM and creative ways to think about STEM when meeting with family members.

• Host fun STEM days or nights that require students and families to solve problems or play games together.

• Include STEM explorations in STEM bags or activities in family newsletters.

• Explicitly share ideas with parents on how to use growth mindset language.

Illustration by Bob Staake, The New York Times
Thank You

Wakelet for session resources can be found here: https://wke.lt/w/s/QMwm51

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