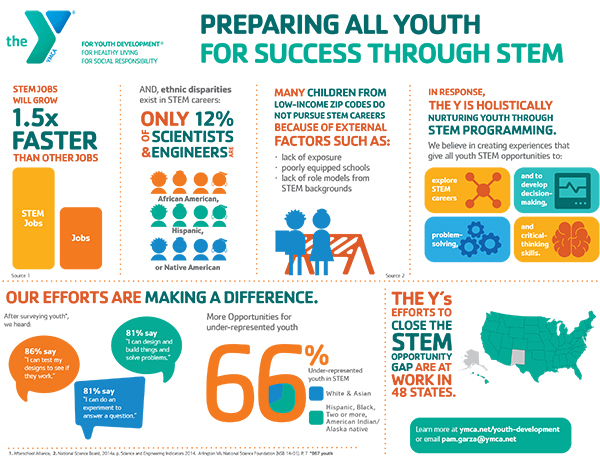
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| **Nevada Math Series**  Session 5 |

Do Now

*Building Math Skills—Math in its “Natural Environment” and STEM*

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source: http://www.valpoymca.org/assets/images/Child%20Care/STEM/STEM\_Infographic.jpg

**Jot down where and how you see the importance of science, engineering, and technology in the world around you. Why do we need to make these connections for our children?**

Why STEM?

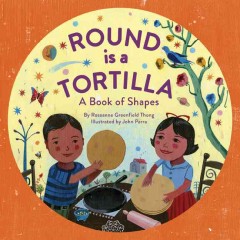
*Building Math Skills— Math in its “Natural Environment” and STEM*

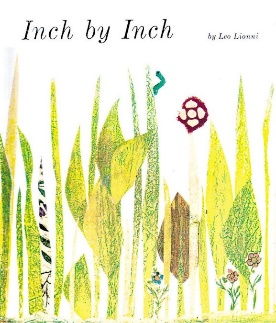
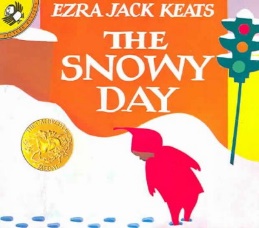
### “Understanding the world around them is one of the strongest predictors of young children’s later science learning and reading, and a significant predictor of mathematics success.”

### Grissmer, et. al., Developmental Psychology, 2010

What is early STEM?

Source: Brooklyn Public library, adapted *from the Boston Children’s Museum STEM Teaching Guide*

Literacy Connections



Excellence in Action: Engineering and Technology

*Building Math Skills— Math in its “Natural Environment” and STEM*

As we watch the video, answer the following questions:

|  |  |  |
| --- | --- | --- |
| What connections can you make between the video and the vision of math we’ve built thus far in our series? | | |
|  | | |
| How do you see children engaging in… | | |
| Problem-solving? | **Reflecting on their approach to problems?** | **Productive struggle?** |
|  |  |  |

**Extend your thinking: What connections do you see to the rubric?**

Excellence in Action: Science

*Building Math Skills— Math in its “Natural Environment” and STEM*

As we watch the video, consider: What connections can you make between what you see in this video and the vision of math we’ve built thus far in our series?

STEM in Action Gallery Walk

*Building Math Skills— Math in its “Natural Environment” and STEM*

**How do we plan effectively for STEM opportunities?**

**Key Idea:** Effective STEM opportunities are intentionally planned to align to math standards, build children’s problem solving skills, support them in productive struggle, and support them to explain their thinking.

**1-Independently**: Read through [the NAEYC article](https://www.naeyc.org/resources/pubs/yc/jul2017/static-circuits-explorations) for the static electricity task or the circuits task (depending on what you are assigned).

**2-In pairs:** Break down the static electricity task or the circuits task with a partner.

|  |  |
| --- | --- |
| What did children do in this task? |  |
| How did this further their understanding of math and make STEM connections? |  |
| What type of thinking did children do? |  |
| What type of math vocabulary and/or math talk was involved? |  |
| What made this task effective? |  |
| How was this task connected to the standards? |  |

*Continue to the next page for your group discussion notes*

**3-In groups of 4:** Discuss what made these activities effective.

|  |  |
| --- | --- |
| What did you hear from your partners about the other activity that you want to note? |  |
| What steps are needed in planning to ensure a STEM activity is fruitful and effective for children? |  |

As a whole group we will discuss: What centers/stations/activities in your rooms do you already have that support science exploration? Feel free to jot down notes here if that’s useful.

Planning for STEM

*Building Math Skills— Math in its “Natural Environment” and STEM*

**Key Idea:** As we know, it’s not enough for us to explain a concept to a teacher or child, we need to make the explanation fun and engaging through intentional activities and classroom opportunities.

* Based on our group brainstorming **(what centers/stations/activities in your rooms do you already have that support STEM exploration?)** pick **one** to focus on.
* **We want to consider:** How can you **use those opportunities that already exist** (like water tables, block tables, etc.) and plan more intentionally for them instead of feeling like you need to create something brand new?
* Use the guided process below to **plan intentionally to use that center/station/activity to make STEM connections.**

|  |  |
| --- | --- |
| What **center/station/activity** did you select? |  |
| **Why?** How does this center/station/activity support STEM exploration? |  |
| What **age** of students are you working with? |  |
| **Goal**: What STEM focus/skill/concept do you want to introduce students to? What do you want them to be able to do? |  |
| **Describe the activity** you would plan for this.  Be sure to address: What problem will students work to solve? |  |

*Continue to the next page for the rest of your planning*

|  |  |
| --- | --- |
| How do you expect students to **collaborate, research, communicate, ask questions** during this activity? |  |
| What THREE **questions will you ask during the activity to build problem-solving and reasoning skills**? |  |
| What **standards** does this connect to? |  |
| How does this connect to **real-life**? |  |
| What opportunities for **math talk** exist in this center/station/activity tied to STEM? What **vocabulary** will you emphasize? |  |

**Partner Feedback**

|  |  |
| --- | --- |
| Glow |  |
| Grow |  |