**Science and Stories: Connecting Literature in the Lab**

**Presenter: Dr. Terri Hebert, Indiana University South Bend**

**Workshop Literature Focus:**

**Aardema, Verna (1981). Bringing the Rain to Kapiti Plain. New York, NY: Dial Books for Young Readers.**

**De Paola, Tommie (1975). The Cloud Book. New York, NY: Holiday House.**

**Locker, Thomas (1977). Water Dance. New York, NY: Voyager Books, Harcourt, Inc.**

**Rogers, Paul (1989). What Will the Weather Be Like Today? New York, NY: Harcourt, Inc.**

**Workshop Objective:**

* *Gain practical application of a blended approach towards science and literature within a Common Core environment*

**Indiana ELA Grade 4 Common Core Standards:**

**Reading Informational Text:**

**4.2.3c Describe prior knowledge of given topic**

**CC.4.RI.2 (4.2.9, 4.5.4) Determine the main idea of a text and explain how it is supported by key details; summarize the text**

**CC.4.RI.3 (4.5.4) Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text**

**Writing:**

**4.5.1b Describe events or experience with sensory details allowing readers to believe in that event or experience**

**4.5.5b Create a list of interesting words (adjectives, adverbs, etc.)**

**CC.4.W.2 (4.4.3, 4.5.2) Write informative/Explanatory texts to examine a topic and convey ideas and information clearly**

**Indiana Science Grade 4 Science Standards:**

**Standard 2: Earth Science**

**4.2.2 Describe how wind, water and glacial ice shape and reshape earth’s land surface by eroding rock and soil in some areas and depositing them in other areas in a process that occurs over a long period of time.**

**4.2.6 Describe ways in which humans have changed the natural environment. Explain if they changes have been detrimental or beneficial.**

**Progression of Learning Experience**

*Note: Large group will be divided into four small teams and then later into partner groups. Small team roles of each member will be determined as task cards are distributed.*

*Stage One: Large Group Pre-Assessment (KWL Chart) – 5 minutes*

* *Facilitator will guide the large group discussion regarding weather, characteristics of precipitation, and the water cycle.*
* *What is known, what is wanting to be known, and later, what is learned will be captured on the large KWL chart.*

*Stage Two: Small Group Reading – 10 minutes*

* *Provide each small group with their unique book selection.*
* *The materials manager will collect the tray of materials for his/her group and return the materials to their original location at the conclusion of the small group reading.*
* *The primary investigator will read the assigned book to the small group (using his/her small group voice).*
* *The data collector will write down key science vocabulary.*
* *The time keeper will manage the given time.*

*Stage Three: Large Group Sharing – 5 minutes*

* *The small group teams’ primary investigator will share key science vocabulary words with the larger group.*
* *The facilitator will write all key science vocabulary words on the KWL chart (vocabulary section).*
* *The facilitator will focus the large groups’ attention to the water cycle vocabulary words (circle – or add – the following words: rain, sea, clouds, lake, stream, river, and sea)*

*Stage Four: Water Cycle Activity – 10 minutes*

* *Small group teams will subdivide into partner groups.*
* *The facilitator will provide brief overview and instructions of the activity.*
* *Partner groups will situate themselves in front of the starting point.*
* *The facilitator will be the time keeper, beginning the activity when all are ready. The facilitator will also conclude the activity at the end of 10 minutes.*
* *Partner groups will then use the remaining 5 minutes to review their water journey.*

*Stage Five: Large Group Sharing – 10 minutes*

* *Random partner groups will share their journey with the larger group.*
* *The facilitator will review the typical water cycle found in textbooks and online. The facilitator will then challenge the large group to consider how this information may change how we teach the water cycle to our students.*

*Stage Six: Conclusion – 10 minutes*

* *The facilitator will revisit the KWL chart and capture at least one thing that was learned today on the appropriate column.*

*Stage Seven: Extension Activities (to consider)*

* *Each partner group will write a story of their raindrop as it moved throughout the various locations in the water cycle activity. Stories will be illustrated connecting an art experience into the overall learning. These can be shared with younger children in the school building, displayed in the library, or kept in the classroom’s reading library.*
* *Data can be collected regarding the patterns of the raindrop’s cycle through the activity. Discussion can emerge with regards to why some stations were visited more frequently/less frequently than others. Patterns can be seen as information is obtained from all groups.*
* *Direct connections with the school’s community can be made. Are there rivers, lakes, and streams nearby? Are there farming communities nearby? If so, what has happened as the state notes a decreasing amount of rainfall and/or snowfall? What may happen if the trends continue?*

***Handouts***

***KWL Chart (with vocabulary word section)***

|  |  |  |  |
| --- | --- | --- | --- |
| *What We Know* | *What We Want to Learn* | *What We Learned* | *Additional Notes and/or Questions* |
|  |  |  |  |
| *Identified Vocabulary Words* |
|  |

***Water Cycle Raindrop Journey – Data Collection Sheet***

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| --- | --- | --- |
| *Partner Group Names* | *Raindrop Journey (include starting point and ending point)* | *Partner Group Observations and/or Questions* |
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***Task Cards***

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| ***Primary Investigator**** ***Reads aloud associated information within the activity or investigation***
* ***Checks for accuracy and clarity of thinking during discussions within the activity or investigation***
* ***Checks written work of the data collector***
* ***Asks questions of the group to the classroom teacher***
 | ***Data Collector**** ***Keeps notes on important thoughts and/or questions expressed in the group***
* ***Writes final summary of the take away messages of the activity or investigation (with the group’s direction)***
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| ***Time Keeper**** ***Keeps track of time***
* ***Reminds group of how much time is left for the activity or investigation***
* ***Encourages group members as the activity or investigation continues***
 | ***Materials Manager**** ***Retrieves, distributes, collects, turns in, and puts away materials needed for activity or investigation***
* ***Manages the materials during the activity or investigation***
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