

Supporting ELLs with Literacy through General Science

Russell Nail
Grimmway Academy

Supporting ELLs with Literacy through General Science

- Using a variety of inexpensive resources and strategies, Middle School (6-8) students, and especially students who are struggling to reach re-designated proficient levels on the CELDT, can improve upon their literacy goals with Science-embedded curriculum.

Purpose

- Over the last 4 years, the students who have entered my Science classroom, on average, have increasing deficiencies in reading ability.
- 2 primary weaknesses of students are:
 - Reading comprehension is weak/non-existent.
 - Below grade-level reading ability

Classroom Challenges

- How do you improve student reading ability in a Science classroom?
- How do you help your students improve their reading comprehension?
- How can I also improve student writing skills?
- How can I do all of the above with a school resource budget-friendly cost of nearly free?

ReadWorks

ReadWorks.org

- ReadWorks.org provides research-based units, lessons, and authentic, leveled non-fiction and literary passages directly to educators online, **for free**, to be shared broadly.

Why ReadWorks

- Variety of articles to choose from
 - Differing in Lexile Score
 - Differing in subjects/content
- They come with a collection of reading comprehension questions to help the reader think about the article they read.
 - 8-10 questions varying between M/C and short answer/constructed response.
- Common Core Aligned

Using ReadWorks

- Working with my grade-level ELA teacher
 - Determine the average Lexile level for my class.
 - A Lexile measure is defined as "the numeric representation of an individual's reading ability or a text's readability (or difficulty).
 - Download non-fiction science, technology, or career-related ReadWorks articles for the average Lexile level of the class.

Using ReadWorks

- Assign as part of a daily homework packet, or as a 5-7 minute warm-up activity in class.
- Assign selections that have a different theme or topic than the content covered in class.
- Gradually increase the Lexile level every 1-2 weeks by 10-20 points.

ReadWorks is great, but...

- What can I do with the curriculum content my school already has?
 - Change how your students read the sections of your existing content textbooks.

The Gist

The Gist

- Gist: The substance or essence of a speech or text.
- A short synopsis or summary of a text passage.

The Gist – a content reading strategy

- Research-based best practice.
Mindful Reading: Strategy Training that Facilitates Transfer

- Carol Rhoder
 - Journal of Adolescent & Adult Literacy*
 - Vol. 45, No. 6 (Mar., 2002), pp. 498-512



- Students need to learn a reading strategy out of context of the content area in order to effectively assimilate the strategy. Once students no longer need scaffolding using the strategy, application to content area is possible.
- The model for strategy instruction is—direct instruction, practice using curriculum-free materials, and application to curriculum.

Who, What, How?

- Students read (newspaper/ReadWorks) articles
- then identify journalism's "5 Ws and 1 H"
 - Who
 - What
 - When
 - Where
 - Why
 - How

Who, What, How?

- After reading the article, students write a 20-word summary called a GIST.
- Once students have mastered writing a GIST using newspaper articles, the strategy is then applied to content area texts to support comprehension and summarizing skills.

But what about the questions in the textbook?

- I have my students read the textbook twice:
 - Read for comprehension (Gist)
 - Read for understanding (answering questions from textbook publisher)

Daily Observation Skills

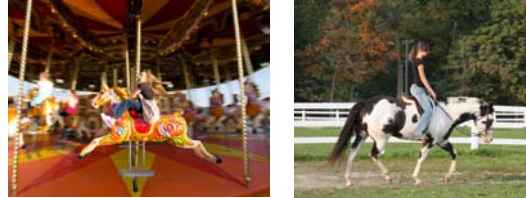
Time to look (Observe)

- Using your brilliant scientific mind, look carefully at the following picture.
- Identify the people, objects, animals, and things in the picture.
 - How many of each thing?
 - What do they look like?
 - What are they doing?
 - What is happening in the photo?
- Why do you think they are doing what you see in the picture? What do you think will happen next?
- On your paper, take notes about your observations and thoughts so you can remember what you see in the picture.



What did you see in the picture?

A girl riding a horse.



While both pictures have the same items performing similar actions, each picture tells a very different story.

Your written observations must be **specific** and **descriptive**.

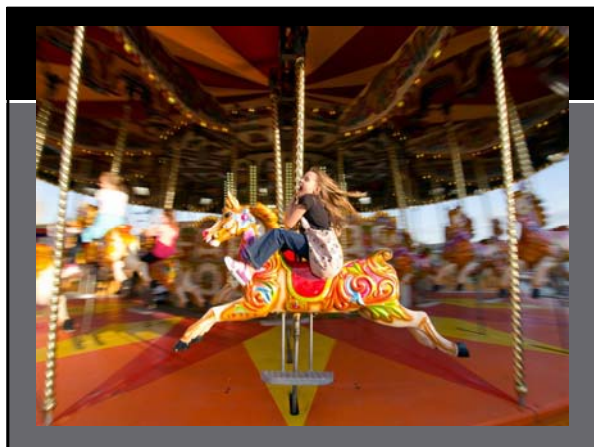
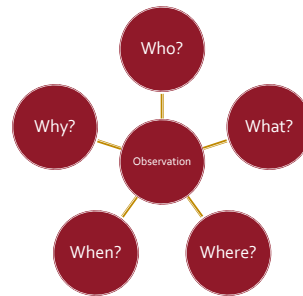
What did you see in the picture?



A girl is riding a horse.

- Can you describe the girl?
- Can you describe the horse?
- Where is the girl riding the horse?
- Why is she riding the horse?
- What is she doing? Describe her actions.
- Are there other people/things in the photo? Can you describe them?
- What do you think will happen next?

What makes a good observation?



The Assembly Manual

The Assembly Manual

- Similar to the traditional ELA process paper.
 - (teach a 3rd grader how to build a sun butter and jelly sandwich)
- Using cool science tools (toys) that grab attention.

How to build a toy car

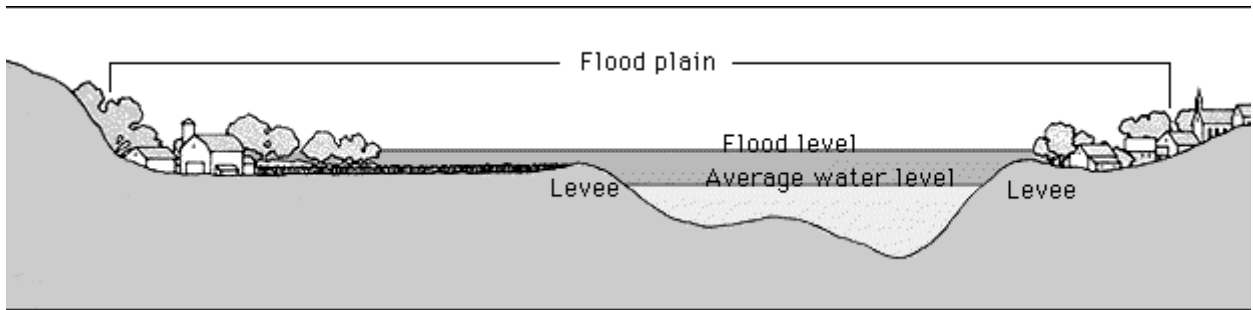
- Demonstrate how to make a toy car using recycled office supply items
- Then give students the parts
- Have students build their own car
- Students then write an assembly/driver's manual

Any Questions?

Copies of the handouts?

- Electronic copies of the handouts and presentation can be downloaded from the CSTA conference site, and from:
 - www.russnail.com/Teaching/index.php
- Email: russ@russnail.com or rmail@grimmwayacademy.com

Earth Science Floods



When dry land is covered by water, we call it a flood. Floods are very dangerous. If they are very bad, homes can be destroyed, and people can die. Floods can happen from three different sources;¹ an ocean, a river or a lake. Floods begin when too much water is flowing in an area that cannot support it. Heavy rain, snow and ice all cause floods. In the picture above, you can see that the flood level rises above the banks of the river. At first, it covers land where no people live, but as it gets higher, it can affect land where people reside.² Homes and cars can be washed away, and people can drown.

There are several ways to protect our land and people from floods. Dams keep water from rushing downstream. Channels filter³ the water out to sea in safe amounts. Dikes, flood wall and levees,⁴ when built; help keep water off the land. We also have systems for warning people about floods that are coming. This way, less people and property are affected.

¹ **sources** – where something comes from

² **reside** – to live in a certain place

³ **filter** – to pass slowly through

⁴ **levees** – a bank built along a river to keep it from flooding

Name: _____ Date: _____

1. A flood happens when
 - a. there isn't enough rain.
 - b. there is too much rain.
 - c. there is a normal amount of rain.
 - d. dams are built.

2. Which of the following are used to protect people from floods?
 - a. Dams and banks.
 - b. Levees and snow.
 - c. Dikes and flood walls.
 - d. Oceans and channels.

3. In this passage a channel is
 - a. a path for water.
 - b. a new station.
 - c. a television station.
 - d. a psychic's vision.

4. Overall, the author seems to feel that floods are
 - a. harmless.
 - b. harmful.
 - c. exciting.
 - d. manageable.

5. It rained hard for five straight days. The river overflowed and water flooded the town.
 - a. the first sentence describes the effect of what happened in the first sentence.
 - b. the second sentence describes the effect of what happened in the first sentence.
 - c. the first sentence describes a problem and the second sentence describes the solution.
 - d. the second sentence describes a problem and the first sentence describes the solution.

6. Why are floods dangerous?

7. Where might a flood start and why?

8. The question below is an incomplete sentence. Choose the word that best completes the sentence:

_____ to the imminent threat of a flood, the authorities told the citizens to evacuate their homes.

- a. So
- b. While
- c. Due
- d. Because

9. Answer the following questions based on the sentence below:

A flood occurs when the water level of an ocean, river or lake drastically increases due to heavy rain, snow or ice and overflows onto surrounding land.

What? a flood

(does) what? _____

When? _____

Why? _____

10. **Vocabulary Word:** reside: to be situated or live in a given place.

Use the vocabulary word in a sentence: _____

Teacher Guide and Answers

Passage Reading Level: Lexile 720

Featured Text Structure: Descriptive – the writer explains, defines or illustrates a concept or topic

Passage Summary: A flood occurs when water excessively covers dry land. Floods can be dangerous, but may be prevented using dams, flood walls and levees. Authorities may also implement a warning system to limit the negative effects of floods.

1. A flood happens when
 - a. there isn't enough rain.
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 - c. there is a normal amount of rain.
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d. the second sentence describes a problem and the first sentence describes the solution.

6. Why are floods dangerous?

Suggested answer: Because floods can destroy people's property, including homes and other valuables. Furthermore, severe floods can in some cases lead to death.

7. Where might a flood start and why?

Suggested answer: Floods might originate from bodies of water such as rivers, lakes, and oceans, after heavy rain causes water levels to rise.

8. The question below is an incomplete sentence. Choose the word that best completes the sentence:

_____ to the imminent threat of a flood, the authorities told the citizens to evacuate their homes.

- a. So
- b. While
- c. **Due**
- d. Because

9. Answer the following questions based on the sentence below:

A flood occurs when the water level of an ocean, river or lake drastically increases due to heavy rain, snow or ice and overflows onto surrounding land.

What? a flood

(does) what? **occurs**

When? **when the water level of an ocean, river, or lake drastically increases**

Why? **due to heavy rain, snow or ice**

10. **Vocabulary Word:** reside: to be situated or live in a given place.

Use the vocabulary word in a sentence: answers may vary.