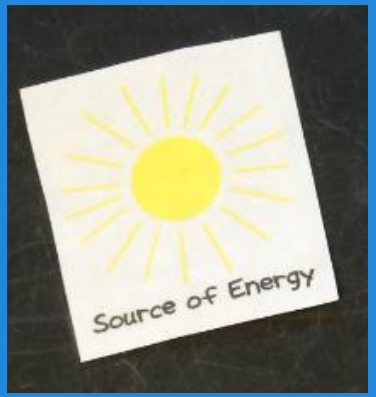

Teaching Science Writing:
Reports to Explanations

Holly Rosa
Tracy Hodgson-Drysdale

Introductions

Holly Rosa
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Collaboration

School-University Partnership
- Grant (whole school)
- Thought partners
  - classroom observations
  - debrief each week
  - planning lessons together
  - writing together

School Demographics

Boston Public Schools

Urban elementary school: 326 Students

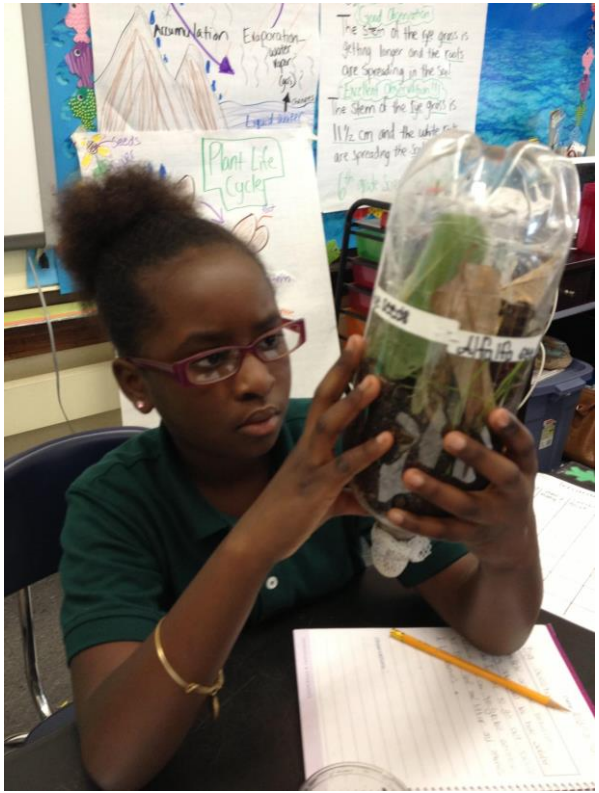
55% Spanish

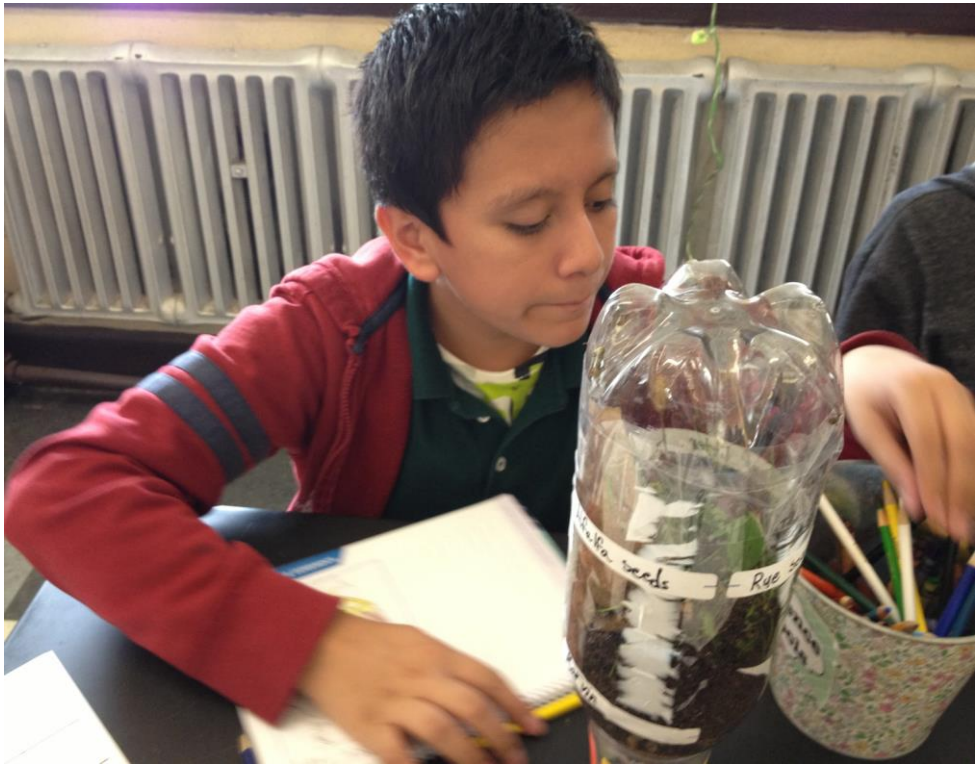
20% Vietnamese

20% Cape Verdean Creole

5% other: Portuguese, Somali, Arabic, Chinese, Benin, Polish, Amharic, Tingrinya, Haitian Creole, Bengali, French, Burmese

Students





Scientists

Session Goals

To develop insights and learn new strategies for teaching science content through:

- Language and writing
- Hands-on experiential activities and/or investigations

Ecosystems Unit

Field Trips - Harbor Islands

Harbor Island

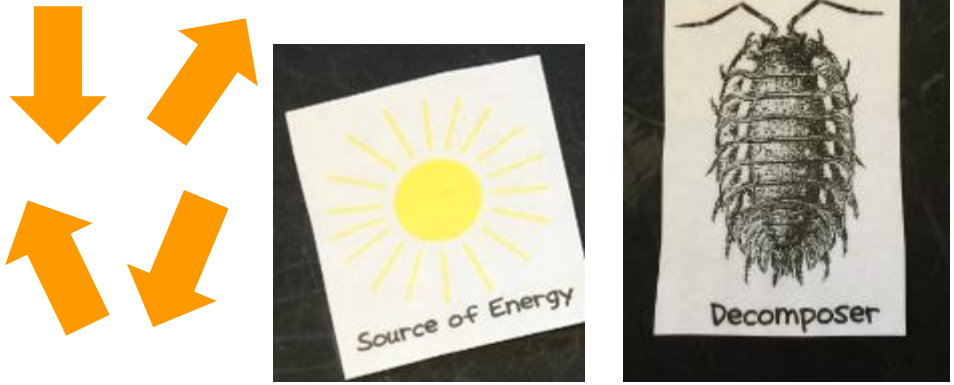
Field Trip - Wakefield Estate

Food Chain Cards Activity

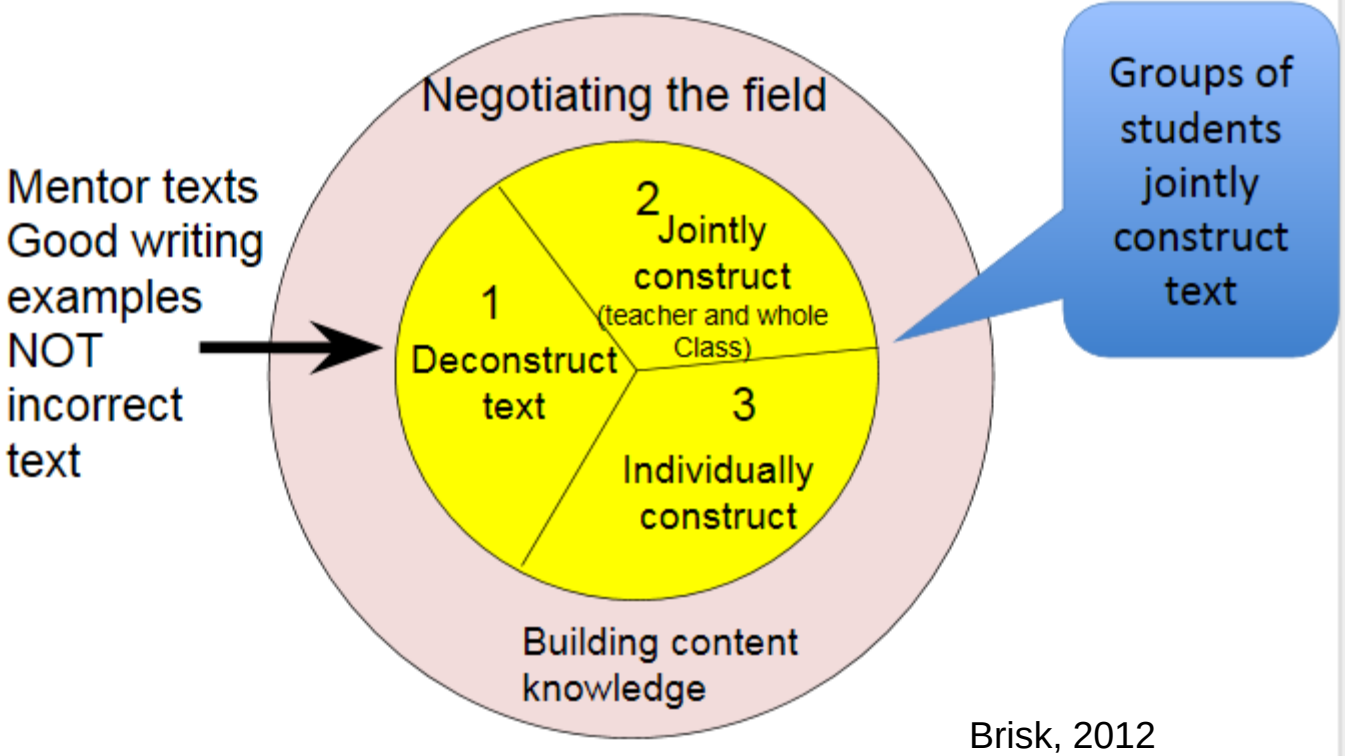
SWBAT explain a meadow food chain by creating a model.
SWBAT discuss the flow of energy through a food chain in small groups using scientific vocabulary (consumer, producer, decomposer, source of energy, flow).

Questions
- Who eats who?
- Which direction does the energy flow?
- What happens to the flow of matter?

Sentence Starters
- The main source of energy is…
- The energy flows from…



The teaching/learning cycle



Brisk, 2012

A Continuum of Science Writing

Science notebooks (everyday writing)

classroom & field trips

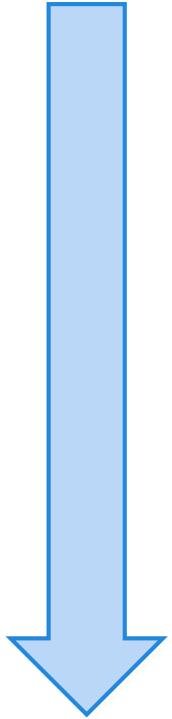
observations, models

Reports

graphic organizers (GOs), notes, drafts, final copies

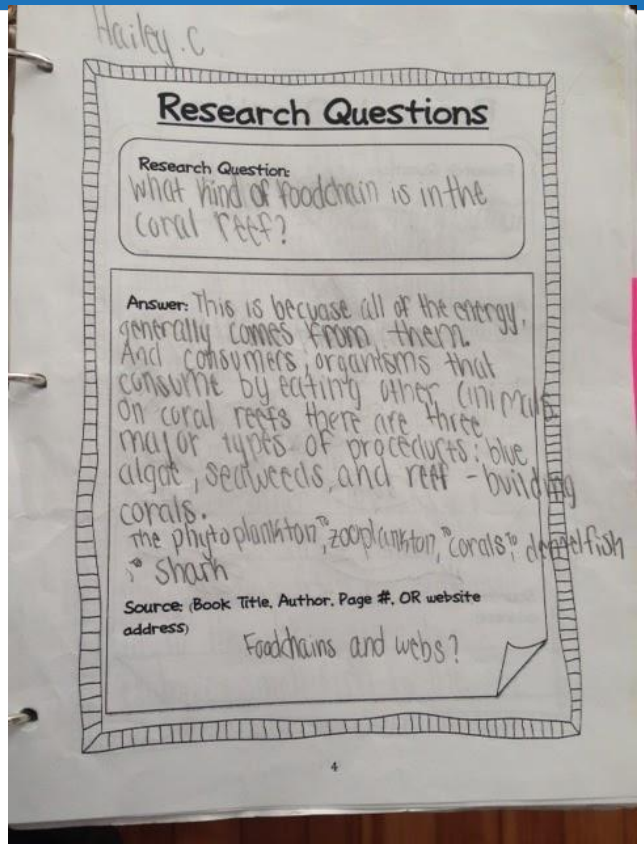
Explanations

knowledge, oral language, cards, graphic organizers, notes, drafts



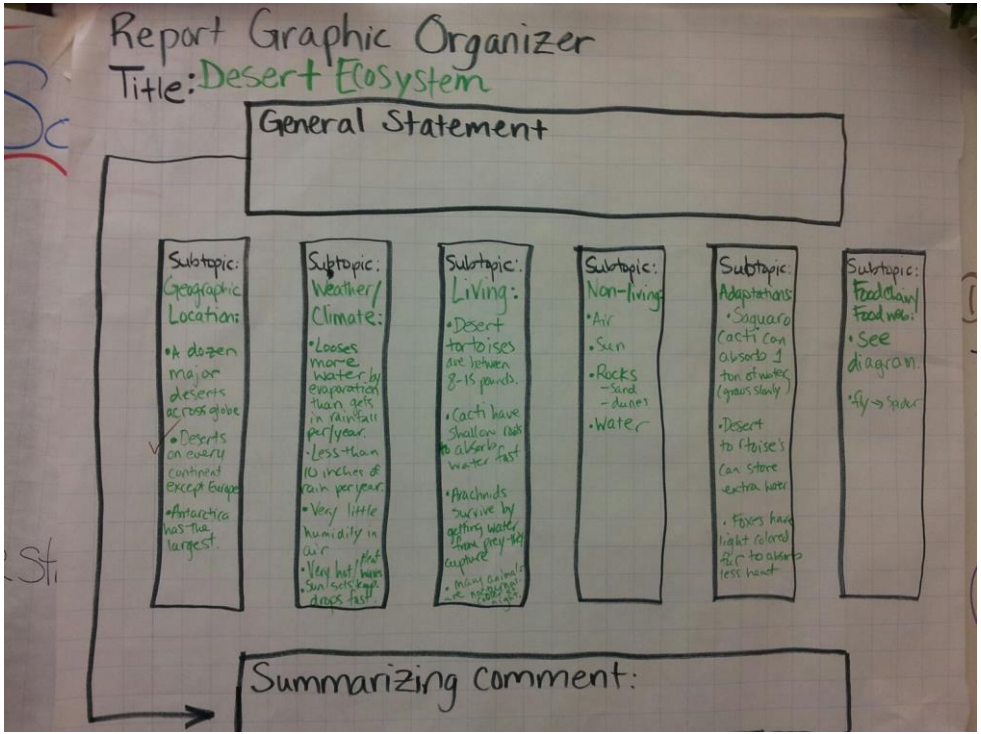
Report Writing

- Students chose the ecosystem they wanted to research
- Research sheets
- Students wrote questions on each subtopic.
    - Example - Where in the world are rainforest ecosystem?

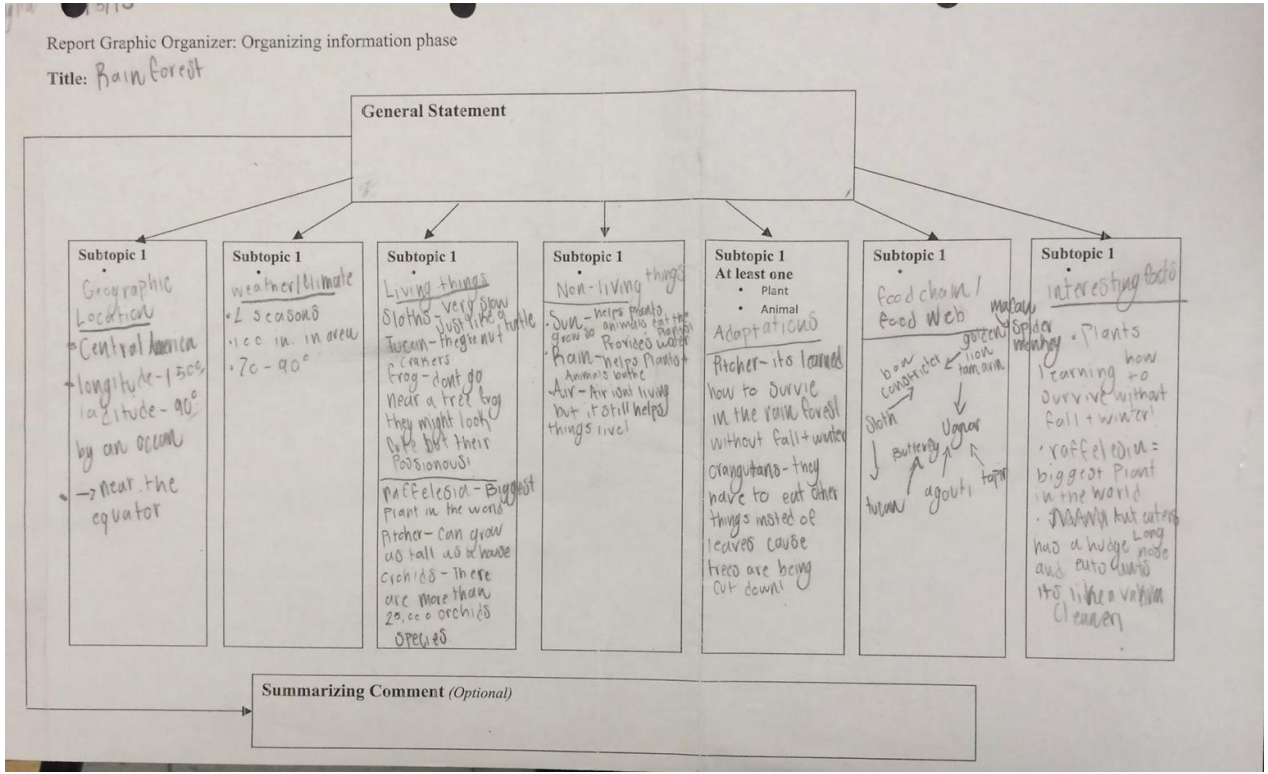


Report Writing

Title
General statement
Subtopics
Summarizing comment



Report Writing


Report Graphic Organizer: Organizing information phase

Title: Rain forest

General Statement

Subtopic 1
- Geographic Location
- Central America
- longitude - 150s latitude - 90°
- by an ocean
- → near the equator

Subtopic 1
- weather/climate
- 2 seasons
- 1cc in. in area
- 70 - 90°

Subtopic 1
- Living things
- Sloths - very slow
- Jaguar - like a turtle
- Toucan - the green nut crackers
- Frog - don't go near a tree frog they might look pretty but their Poisonous!
- raffelesia - Biggest Plant in the world
- Pitcher - Can grow as tall as a house
- Orchids - There are more than 25,000 orchids species

Subtopic 1
- Non-living things
- Sun - helps plants grow so animals eat the plants
- Rain - helps Plants + Animals drink water
- Air - Air is not living but it still helps things live!

Subtopic 1
At least one
- Plant
- Animal

Adaptations
- Pitcher - its learned how to survie in the rain forest without fall + winter
- orangutans - they have to eat other things instead of leaves cause trees are being cut down!

Subtopic 1
- food chain / food web
- boa constrictor
- jaguar
- sloth
- butterfly
- agouti
- tapir
- macaw
- spider monkey

Subtopic 1
- interesting facts
- Plants learning how to survive without fall + winter!
- raffelesia = biggest Plant in the world
- [illegible] that eaters has a huge Long nose and eats [illegible] its like a vacuum Cleaner

Summarizing Comment *(Optional)*

- Co-constructed sample GO with students
- Subtopics are in a specific order

Deconstruct a Text

SWBAT describe the difference between climate and weather by learning about a desert ecosystem.

SWBAT write a paragraph on weather for their ecosystem report by deconstructing a paragraph from a mentor text as a class.

1. What's the main idea of this paragraph?
2. How would you paraphrase some supporting details?
3. Make a list of adjectives from the mentor text.

Co-construct a Report

How would you write a text with your students?

What supports would you include?

Turn and talk to your neighbor...

Sentence Starters

Guide students in using the language of science

Classroom teacher and science teacher held conferences with students about their writing.

Sentence Starters for Ecosystem Report

_____ (ecosystem) are _____ (adjective) places.

When it's hot…

In the summer...

When it's cold…

In the winter...

The weather is…

Joint Construction

“Deserts are a dangerous place. When it’s hot there is very little humidity. When the sun sets it’s cold. The weather is hot during the day and very little rain falls each year, less than 10 inches. More water evaporates than falls each year in rainfall because of the daily heat.”

From Reports to Explanations

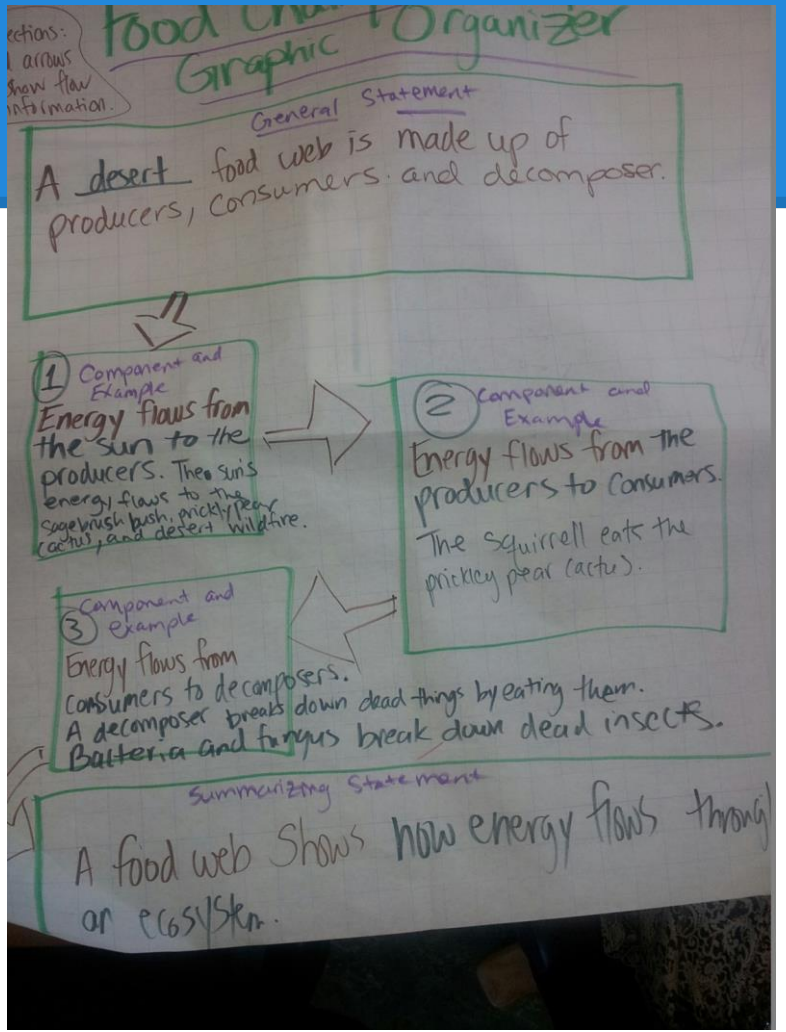
Followed the same framework: TLC

Reports on ecosystems

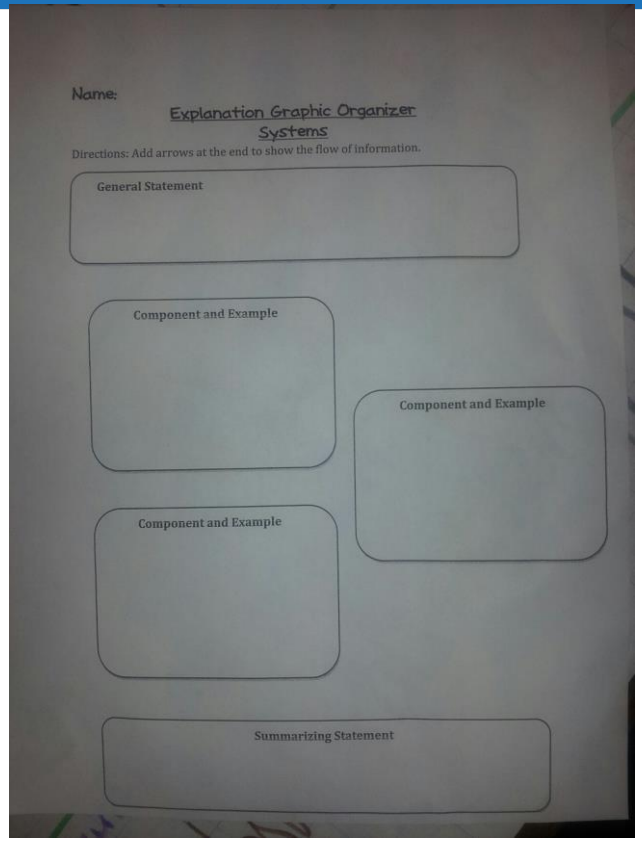
Explanation of food chains and webs

Explanation Writing

Holly's chart paper GO
- Different types of explanations
- These were "systems"
- Sentence starters
- Color coding
- Co-constructed an example of GO



Explanation Student GO



Name:

Explanation Graphic Organizer
Systems

Directions: Add arrows at the end to show the flow of information.

General Statement

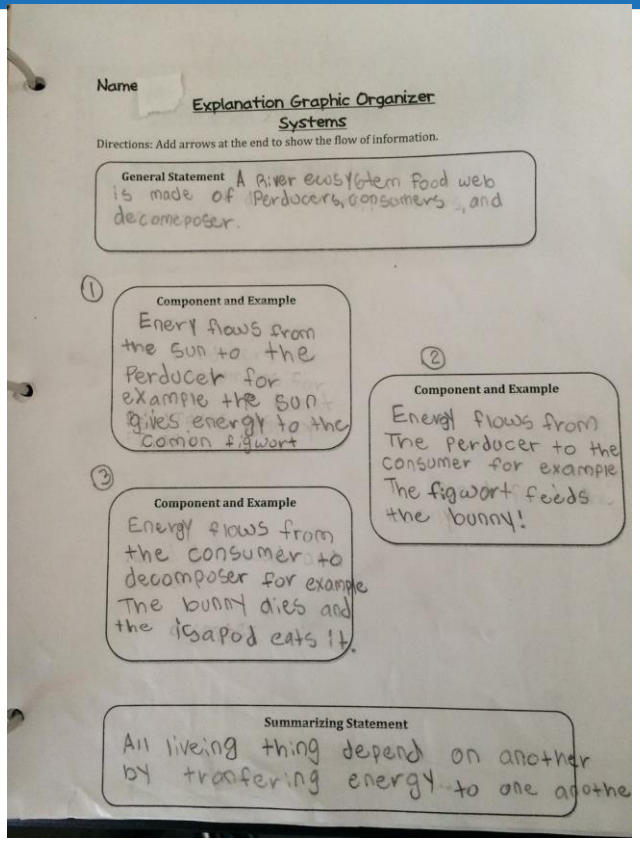
Component and Example

Component and Example

Component and Example

Component and Example

Summarizing Statement



Name

Explanation Graphic Organizer
Systems

Directions: Add arrows at the end to show the flow of information.

General Statement A River ecosystem food web is made of Perducers, consumers, and decomeposer.

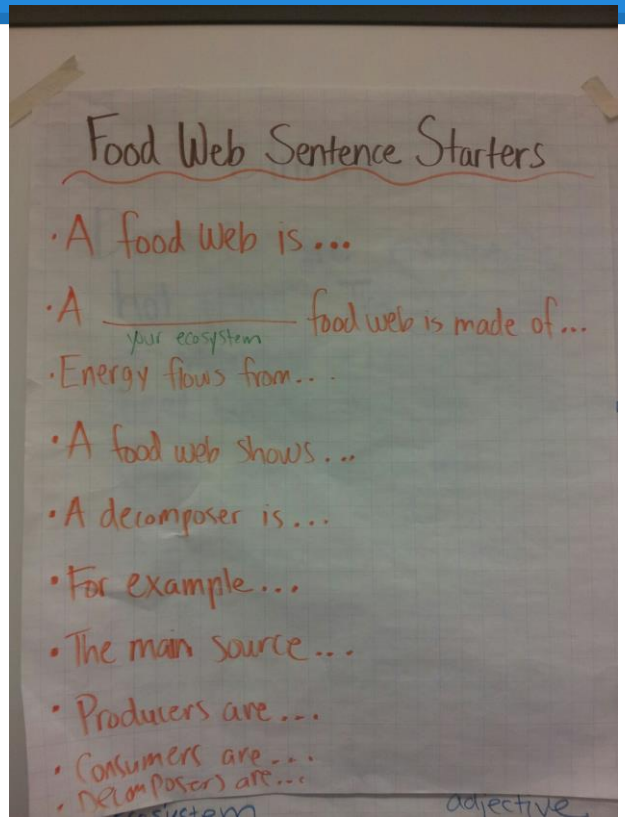
1 Component and Example
Enery flows from the sun to the Perducer for example the sun gives energy to the comon figwort

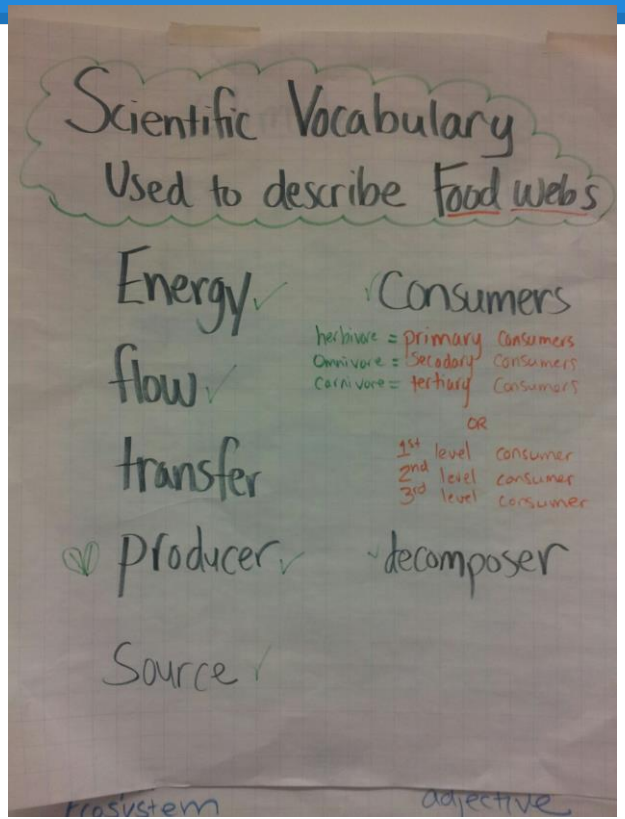
2 Component and Example
Energy flows from The perducer to the consumer for example The figwort feeds the bunny!

3 Component and Example
Energy flows from the consumer to decomposer for example The bunny dies and the isapod eats it.

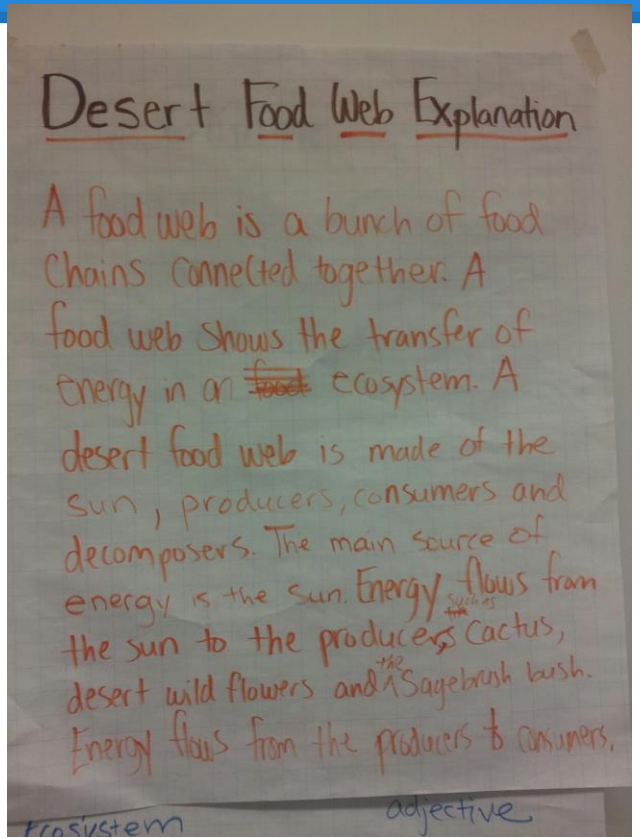
Summarizing Statement
All liveing thing depend on another by tranfering energy to one another

Explanation Language





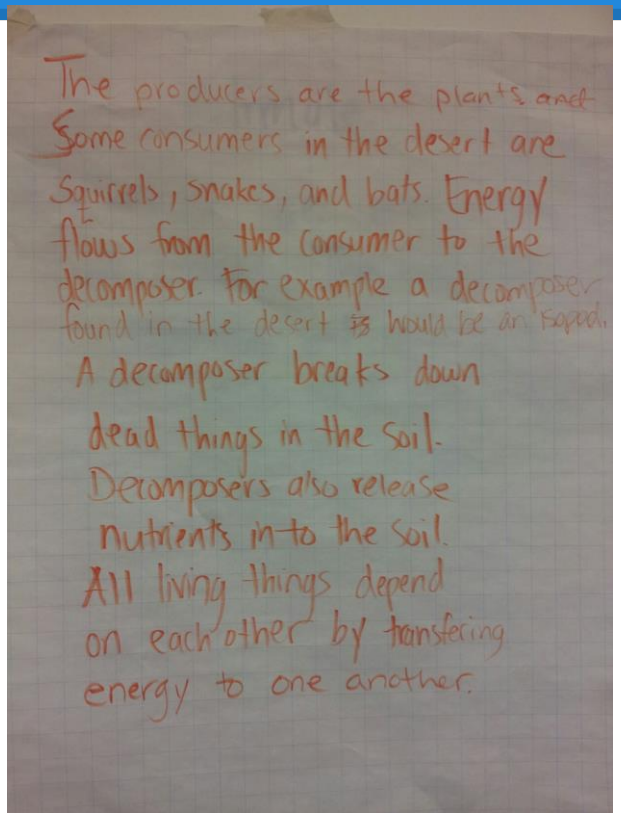
Explanation Co-Construction



Desert Food Web Explanation

A food web is a bunch of food chains connected together. A food web shows the transfer of energy in an ~~food~~ ecosystem. A desert food web is made of the sun, producers, consumers and decomposers. The main source of energy is the sun. Energy flows from the sun to the producers cactus, desert wild flowers and the sagebrush bush. Energy flows from the producers to consumers.

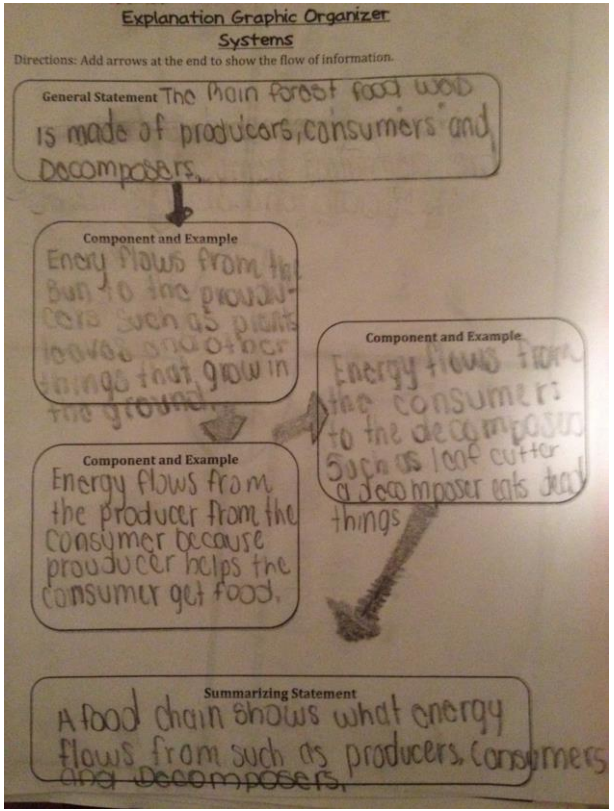
ecosystem adjective



The producers are the plants and some consumers in the desert are squirrels, snakes, and bats. Energy flows from the consumer to the decomposer. For example a decomposer found in the desert is would be an isopod. A decomposer breaks down dead things in the soil. Decomposers also release nutrients in to the soil. All living things depend on each other by transfering energy to one another.

Analyze Student Work

The Rain forest food web is made of producers, consumers, and Decomposers.
Energy flows from the sun to the producers such as plants leaves and other things that grow in the ground.
Energy flows from the producer from the consumer because producer helps the consumer get food.
Energy flows from the consumers to the decomposers such as leaf cutter a decomposer eats dead things.
A food chain shows what energy flows from as producers, consumers and Decomposers.



Student Work

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Student Work

The Rain forest food web **is made of** producers, consumers, and Decomposers.
Energy **flows from** the sun **to** the producers such as plants leaves and other things that grow in the ground.
Energy **flows from** the producer **from** the consumer because producer helps the consumer get food.
Energy **flows from** the consumers **to** the decomposers such as leaf cutter a decomposer eats dead things.
A food chain shows what energy flows **from** as producers, consumers and Decomposers.

Student Work

An ocean foodweb is made of sun, producers, consumers and decomposers.
Energy flows from the sun to the Producers such as seaweed for example dead mans finger
Energy flows from the Pruducers to the consumer. Such as shark and courl reaf [coral reef].
Energy flows from consumers to decomposers. For example lobster and krabs are decomposers.
[No summarizing statement.]

Science and Children

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