



The Consortium for Achievement in Mathematics and Science (CAMS)

CAMS Peer Teacher Workshops

Ensuring Continuous Improvement

- CAMS worked to establish a vision of quality science instruction among all partners.
- Classroom observations were conducted formally and informally by:
 - District administrators on CAMS leadership teams
 - Coaches
 - External evaluators

What we often found:

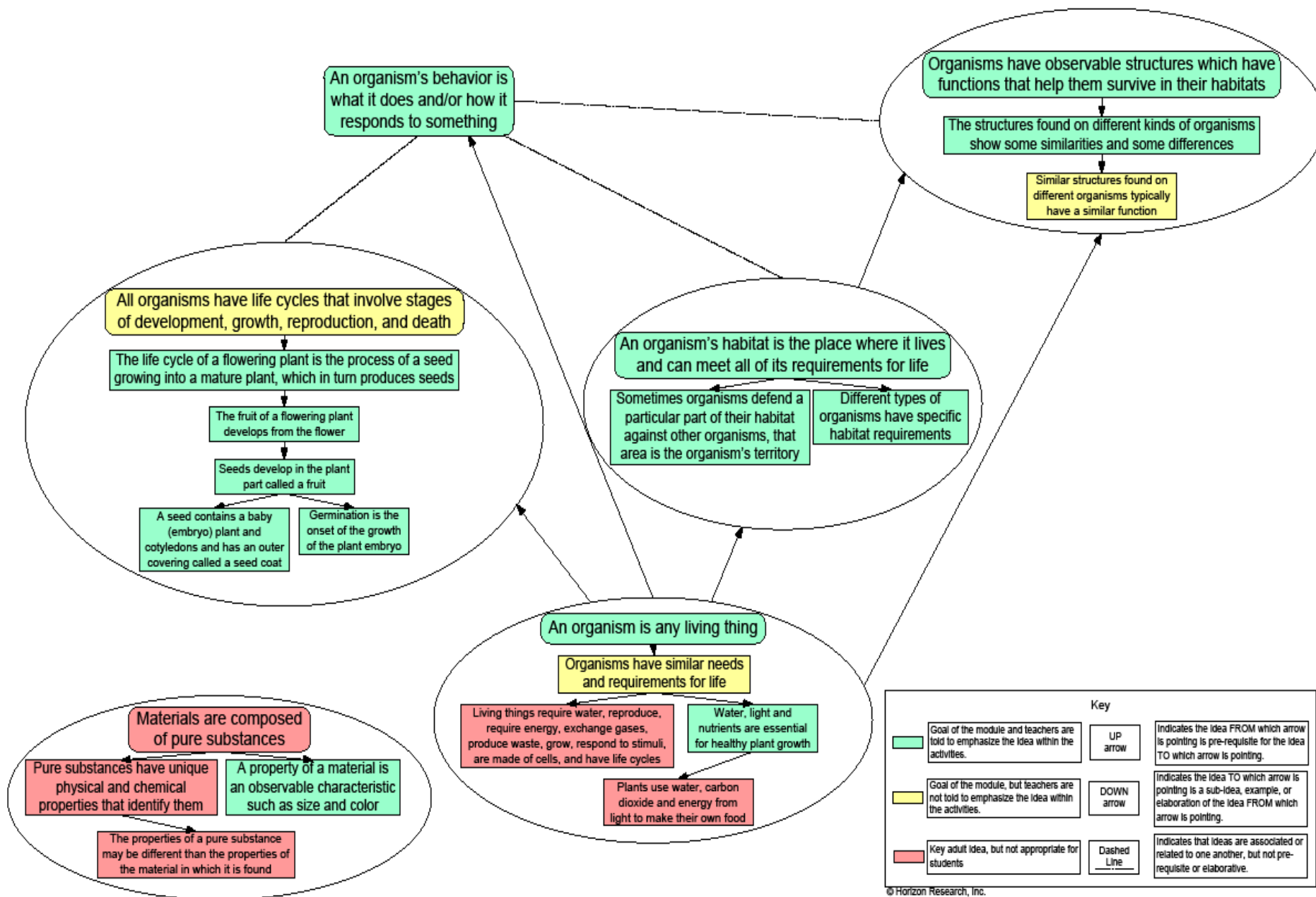
- Going through the steps of the activity in the instructional materials (FOSS, STC).
- Little attention to linking the activity to key science ideas.
- Few connections made among lessons/sometimes skipping important lessons.

- PD providers needed to be more explicit about keeping the content of the activities in the foreground.
- Instructional materials did not always provide sufficient guidance to PD providers or teachers:
 - what concepts are intended to be developed in specific activities.
 - how to implement lessons to keep content in the foreground; and
 - how sequences of lessons work together to develop a concept.

Tools to Support Effective Implementation of Instructional Materials

- Module Content Framework
 - Identifies the science ideas students are expected to learn in the materials and how those ideas relate to big ideas in science

STRUCTURES OF LIFE



What do the colors mean?

- **Green concepts:** Explicit goal of the module and teachers are told to emphasize the concept within the activities.
- **Yellow concepts:** Implicit goal of the module, but teachers are not told to emphasize the concept in the activities.
- **Red concepts:** Key adult idea, but inappropriate for students or not taught by the lessons in the instructional materials.

- While there are multiple correct ways to arrange the concepts, the frameworks take into account both the accuracy of the concepts as well as the structure of the module.
- Need to have a good understanding of the content and of the instructional materials to develop these frameworks.

- Content Storyline Matrix
 - Describes how each of the student ideas is developed through the lessons in the instructional materials
 - Includes information about in which lessons students develop, master, and reinforce a concept

Structures of Life Matrix

Concepts	Investigation 1: Origin of Seeds			Investigation 2: Growing Further			Investigation 3: Meet the Crayfish				Investigation 4: Meet the Land Snail				Investigation 5: Bess Beetles				
	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	4.4	5.1	5.2	5.3	5.4	
Materials are composed of pure substances																			
A property of a material is an observable characteristic such as size and color	m	r																	
Pure substances have unique physical and chemical properties that identify them																			
The properties of a pure substance may be different than the properties of the material in which it is found																			
An organism is any living thing			d	m		r	r				r					r			
Organisms have similar needs and requirements for life					d			d			d	d			m				
Living things require water, reproduce, require energy, exchange gases, produce waste, grow, respond to stimuli, are made of cells, and have life cycles																			
Water, light and nutrients are essential for healthy plant growth					m														
Plants use water, carbon dioxide and energy from light to make their own food																			
An organism's habitat is the place where it lives and can meet all of its requirements for life									m										
Sometimes organisms defend a particular part of their habitat against other organisms, that area is the organism's territory											m								
Different types of organisms have specific habitat requirements					d			m			r				r				
habits			d	d		d					d	m			r	r			
The structures found on different kinds of organisms show some similarities and some differences												d				m			
Similar structures found on different organisms typically have a similar function												m				r			
An organism's behavior is what it does and/or how it responds to something										m	r		r			r			
All organisms have life cycles that involve stages of development, growth, and reproduction, and death								m											
The life cycle of a flowering plant is the process of a seed growing into a mature plant, which in turn produces seeds			d					m											
The fruit of a flowering plant develops from the flower								m											
Seeds develop in the plant part called a fruit	m																		
A seed contains a baby (embryo) plant and cotyledons and has an outer covering called a seed coat				m	r														

How these tools are being used

- PD providers use the tools to design the professional development.
- Teachers are using the tools to support their implementation of their instructional materials.