Snapshot of a Perfectly Integrated Curriculum in K-6

Tami Eggensperger
Arkansas

Picture-Perfect SCIENCE

Tami Eggensperger

29 years in Education

23 years classroom experience K-6

6 years Curriculum Specialist

NSTA Consultant

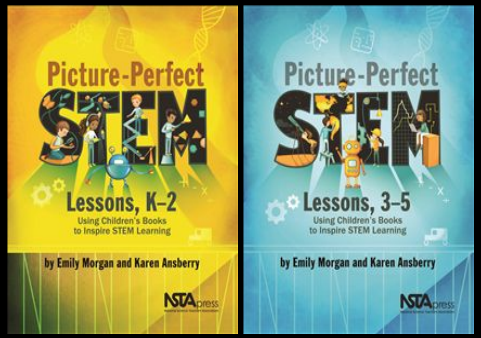
Goals:

- Science and Literacy Reloaded
- Use of notebooking for data collection and authentic writing
- Implementing Arkansas Science Standards with Conceptual Shifts for Three Dimensional Teaching and Learning

Accomplish this by utilizing Karen Ansberry and Emily Morgan's Picture Perfect Science, Paige Keely's Formative Assessments and EveryDay Science Mysteries

NSTA Press

Picture-Perfect SCIENCE



Karen Ansberry and Emily Morgan

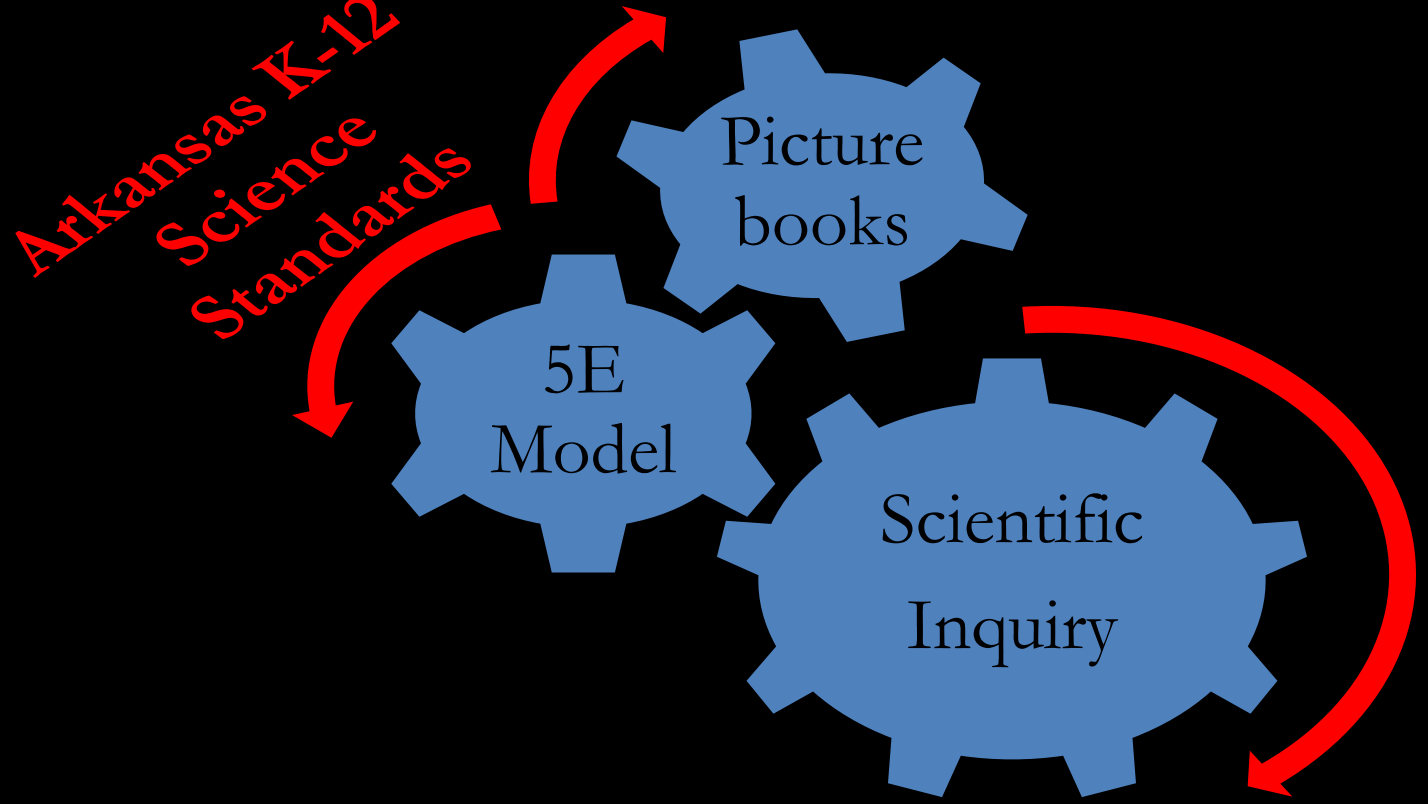
Picture Perfect Science

“Picture Perfect Science has allowed us as a district to Integrate reading and writing into science. We now teach reading and writing using science concepts that are being taught through Arkansas Literacy and Science Standards.

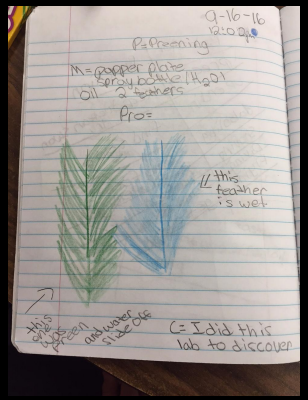
The lessons in the 5 PPS Books build on solid reading comprehension skills. Each lesson uses a fiction and nonfiction book to either Engage, Explore, Explain, or Elaborate.”

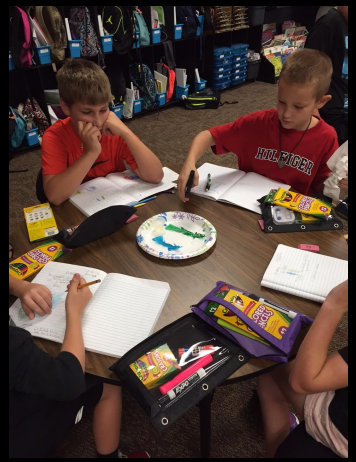
Whitney Walker 3rd Grade Cabot Schools

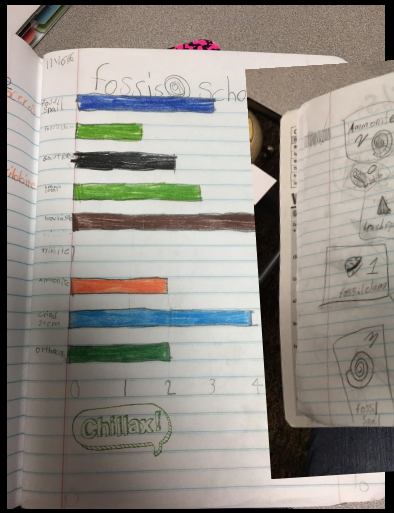
3 Main Components

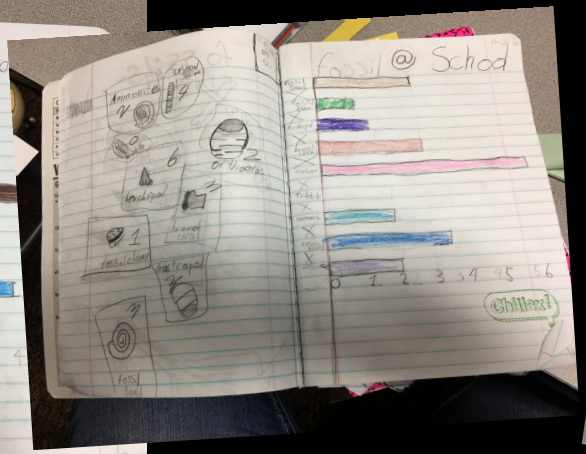


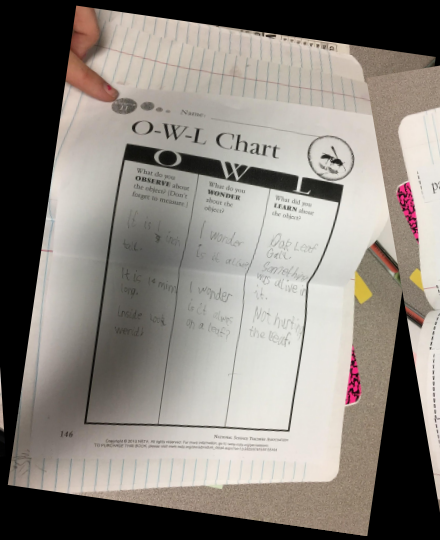
Notebooking

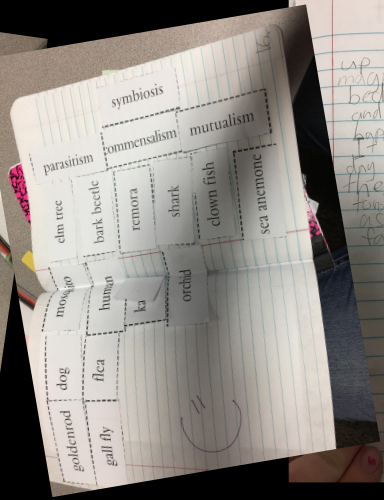


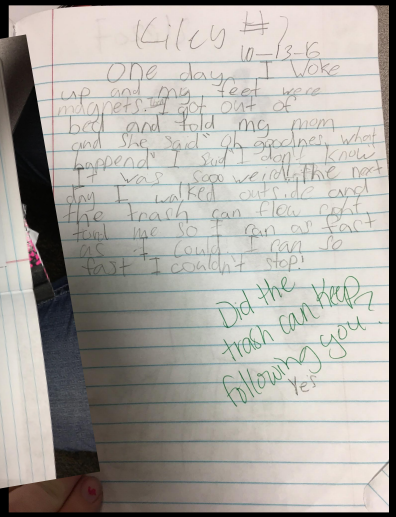












Formative Assessment

“In differentiated classrooms, teachers begin where students are, not the front of a curriculum guide.” Carol Ann Tomlinson

The story format is used because it is one of the most effective ways to engage students’ attention right from the start. Each chapter includes a list of science concepts explored, targeted strategies for using the stories with children in grades K–4 and with older students in grades 5–8.

Richard Konicek-Moran

Formative Assessment

Assessment probes included in this volume can provide information about

- How students' ideas may differ from one grade level to the next
- How ready individual students are for instruction
- Ideas students have before instruction
- Whether conceptual change is occurring
- Whether students retain the accepted scientific ideas years after instruction or revert back to their prior knowledge
- Gaps that exist in a school's or district's curriculum

Paige Keeley

Success

By utilizing NSTA resources

- Science and Literacy Reloaded Picture Perfect Science, Uncovering Student Ideas, and EveryDay Science Mysteries
- Use of notebooking for data collection and authentic writing
- Implementing Arkansas Science Standards with Conceptual Shifts for Three Dimensional Teaching and Learning

For example, instead of simply learning about the topics of, PS2A: Motion and Stability students are engaged in building evidence-based explanatory ideas that help them figure out forces and motion.

ACT Aspire

PPS-ESM-USI-Arkansas Alignment

File Edit View Insert Format Data Tools Add-ons Help Last edit was made on October 10 by Kim Stilwell

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1		Arkansas Standard/NGSS	PPS (1)	MPPS (2)	EMPPS (3)	PPSTEM K-2	PPSTEM 3-5	ESM (1)	MESM (2)	EMESM (3)	YMESM (4)	USI PS (1)	USI (1)	USI (2)	USI (3)	USI (4)	USIPS (1)	USIPS (2)	USI Life	USI Earth Environmental	USI Astronomy
2																					
3	TOPIC	NGSS/Arkansas Standard	PPS (1)	MPPS (2)	EMPPS (3)	PPSTEM K-2	PPSTEM 3-5	ESM (1)	MESM (2)	EMESM (3)	YMESM (4)	USI PS (1)	USI (1)	[illegible]	USI (3)	USI (4)	USIPS (1)	USIPS (2)	USI Life	USI Earth Environmental	USI Astronomy
4		**Kindergarten**		**Kindergarten**		**Kindergarten**			**Kindergarten**			**Kindergarten**									
5		K-PS2-1 Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.				Move It (Chapter 10)					Stuck? (Chapter 19)						How Far Did It Go? (Chapter 1)				
6	Forces and Interactions: Pushes and Pulls	K-PS2-2 Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.*		Roller Coasters (Chapter 14)		Move It (Chapter 10)		Bocce Anyone? (Chapter 15)				Marble Roll (Chapter 15)					Talking About Forces (Chapter 14)				
7		K-PS3-1 Make observations to determine the effect of sunlight on Earth's surface.		Sunshine on My Shoulders (Chapter 17)		Feel the Heat (Chapter 9)					The Coldest Time of the Day (Chapter 15)				Summer Talk (Chapter 23)	Camping Trip (Chapter 19)					
8		K-PS3-2 Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.*				Build It! (Chapter 7) Feel the Heat (Chapter 9)															
9		K-ESS2-1 Use and share observations of local weather conditions to describe patterns over time.									Sunrise Sunset (Chapter 8)			Darkness at Night (Chapter 23)	Me and My Shadow (Chapter 24) Where Do Stars Go? (Chapter 25)						
10	Weather and Climate	K-ESS3-2 Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.*																			
11		K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive.			Do You Know Which Ones Will Grow (Chapter 1)	Design a Habitat (Chapter 15)															
12		K-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.		Be a Friend to Trees (Chapter 12)		Design a Habitat (Chapter 15)															
13		K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals (including		Be a Friend to		Design a															

Kindergarten | 1st Grade | 2nd Grade | 3rd Grade | 4th Grade | 5th Grade | 6th Grade | Sheet2

Table 2. Changes Since 2001-02 in Instructional Time for Elementary School English Language Arts and Math in Districts Reporting Increases

Of those districts reporting an increase in instructional time . . .

Subject	Average Total Instructional Time Pre-NCLB (Minutes per Week)	Average Total Instructional Time Post-NCLB (Minutes per Week)	Average Increase (Minutes per Week)	Average Increase as a Percentage of Total Instructional Time
English language arts	378	520	141	47%
Mathematics	264	352	89	37%
Either/both subject(s)	513	699	186	43%

Table reads: Among districts reporting increases in instructional time, the average total instructional time for ELA before NCLB was 378 minutes per week, compared with 520 minutes per week after NCLB. The average increase for ELA was 141 minutes per week, or a 47% increase over the pre-NCLB level.

Note: The final column shows the percentage increase in instructional time in the average district. Percentages were first calculated for each district in the sample, then weighted and averaged across districts to generate the numbers reported here. More information about the calculations presented in this table can be found at www.cep-dc.org in the Methodology link accompanying this report.

Source: Center on Education Policy, February 2007, District Survey, items 18 & 19 (table IT-18A).

Table 3. Changes Since 2001-02 in Instructional Time for Various Elementary School Subjects in Districts Reporting Decreases

Of those districts reporting an increase in instructional time for ELA and/or math AND a decrease in instructional time for one or more of the subjects listed . . .

Subject or Period	Average Total Instructional Time Pre-NCLB (Minutes per Week)	Average Total Instructional Time Post-NCLB (Minutes per Week)	Average Decrease (Minutes per Week)	Average Decrease as a Percentage of Total Instructional Time
Social studies	239	164	76	32%
Science	226	152	75	33%
Art and music	154	100	57	35%
Physical education	115	75	40	35%
Recess	184	144	50	28%
Lunch	*	*	*	*
One or more subjects listed	461	318	145	32%

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Karen Ansberry and Emily Morgan's Picture Perfect Science, Paige Keely's Formative Assessments and Richard Konicek-Moran's EveryDay Science Mysteries

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Questions?

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Resources:

NSTA

http://www.nsta.org/publications/press/picture.aspx

http://common.nsta.org/resource/?id=10.2505/9781935155188

http://common.nsta.org/resource/?id=10.2505/9781933531212

https://www.nsta.org/store/product_detail.aspx?id=10.2505/9781412954037

http://static.nsta.org/files/sc0907_8.pdf

http://www.nsta.org/publications/news/story.aspx?id=57384