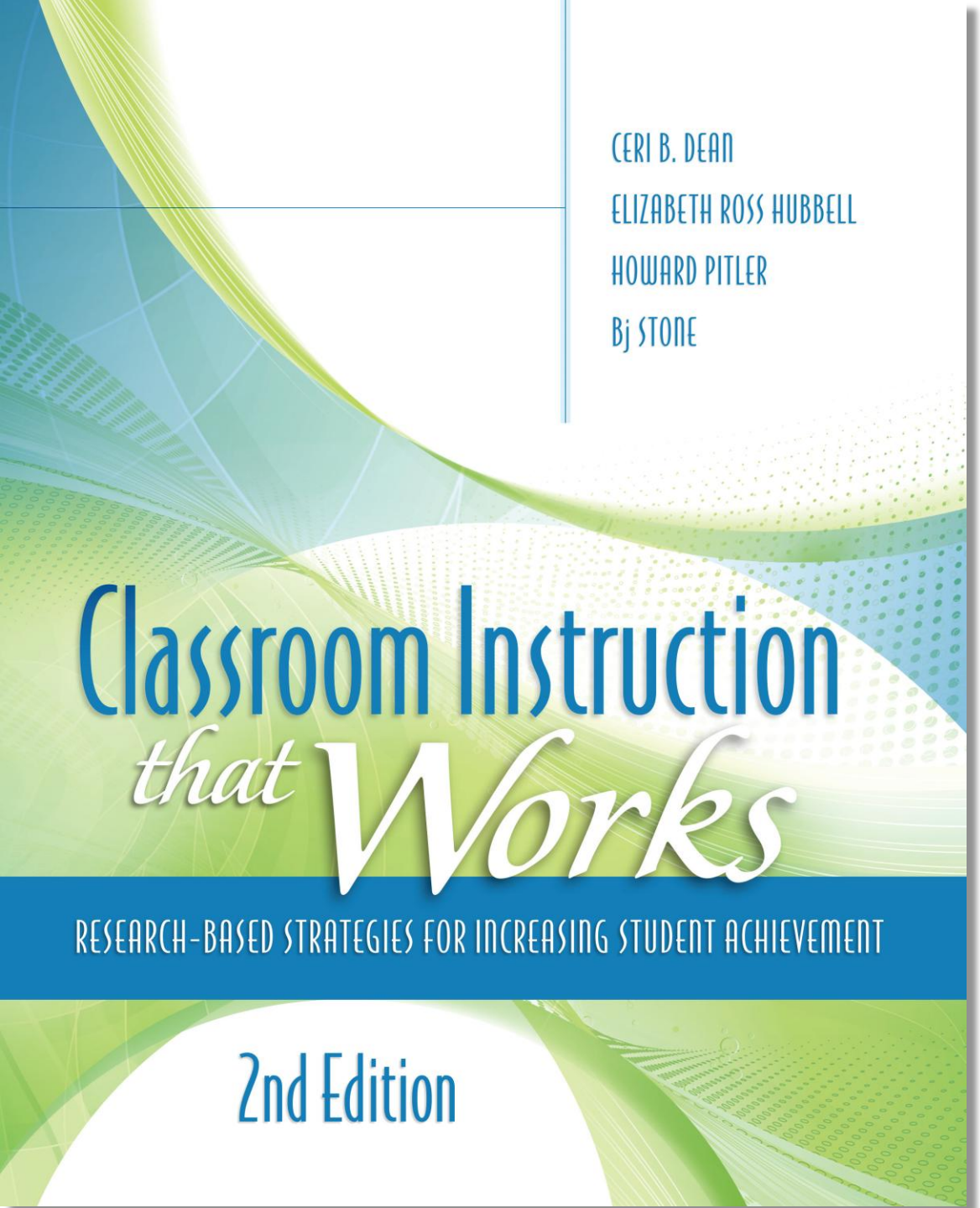


Classroom Instruction that Works

Day One

presented by
Chris Moddelmog
Smoky Hill ESC
www.smokyhill.org

McREL

McREL Mission Statement

Making a difference in the quality of education and learning for all through excellence in applied research, product development, and service.


McREL
4601 DTC BOULEVARD

Where Do You Fit?

Experience with strategies / Years in Education	Never heard of CITW strategies.	Know a few CITW strategies.	Know and use several CITW strategies.	Could teach my peers about CITW strategies.
Novice (1-5 years)				
Experienced (6-19 years)				
Veteran (20 + years)				

Grounding Circle

What questions/concerns do you have about CITW?

Where do you fit on the chart?

What is your best hope for our time together?

Today's Agenda

Overview

- New research behind CITW
- Reducing variability

Creating an Environment for Learning

- Setting Objectives & Providing Feedback
- Reinforcing Effort & Providing Recognition
- Cooperative Learning

Review

Reducing variability =

raising student achievement

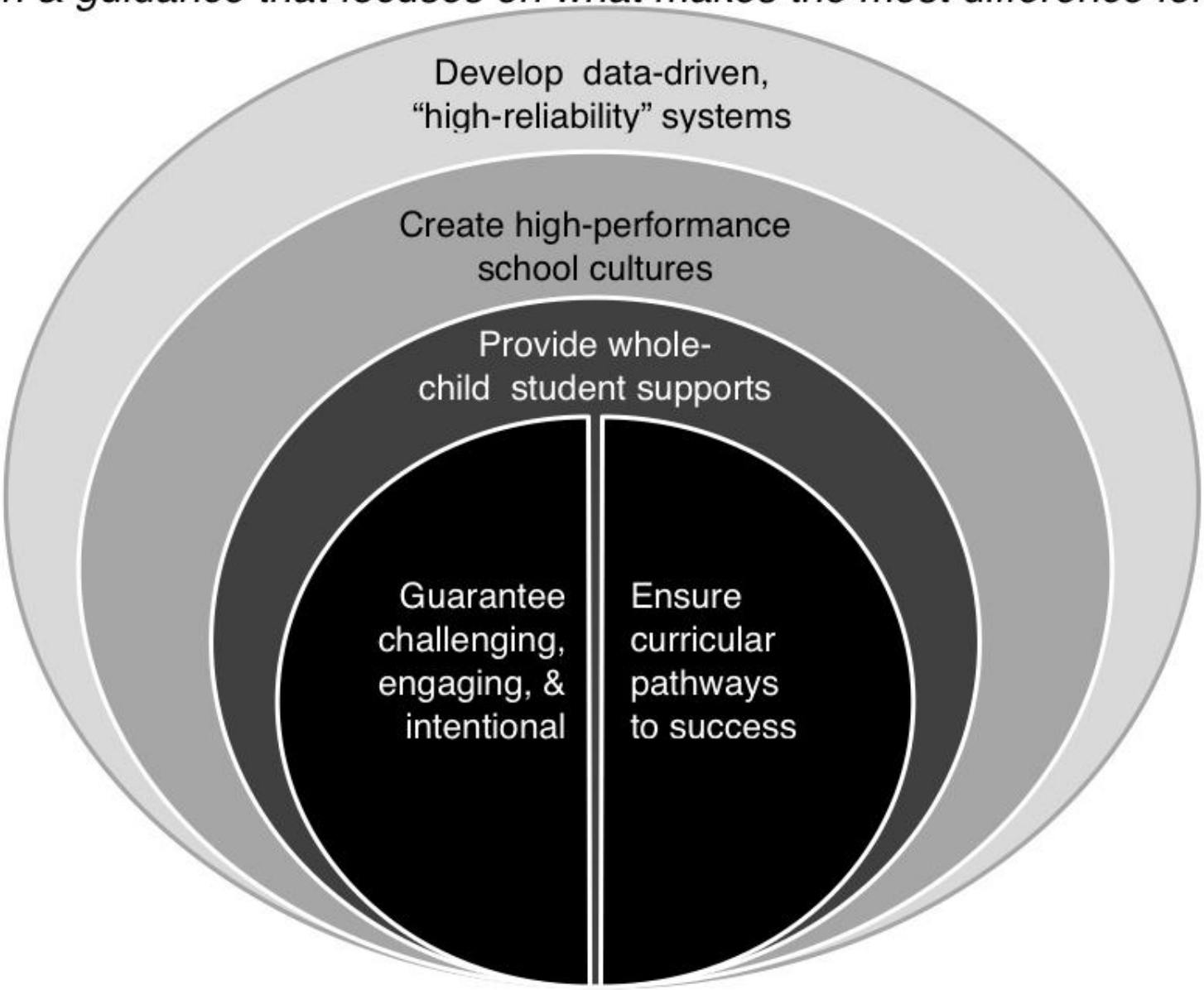
Two questions that students ask every day when they arrive at school…

Will I be accepted?

Can I do the work?

What Matters Most

Research & guidance that focuses on what makes the most difference for students

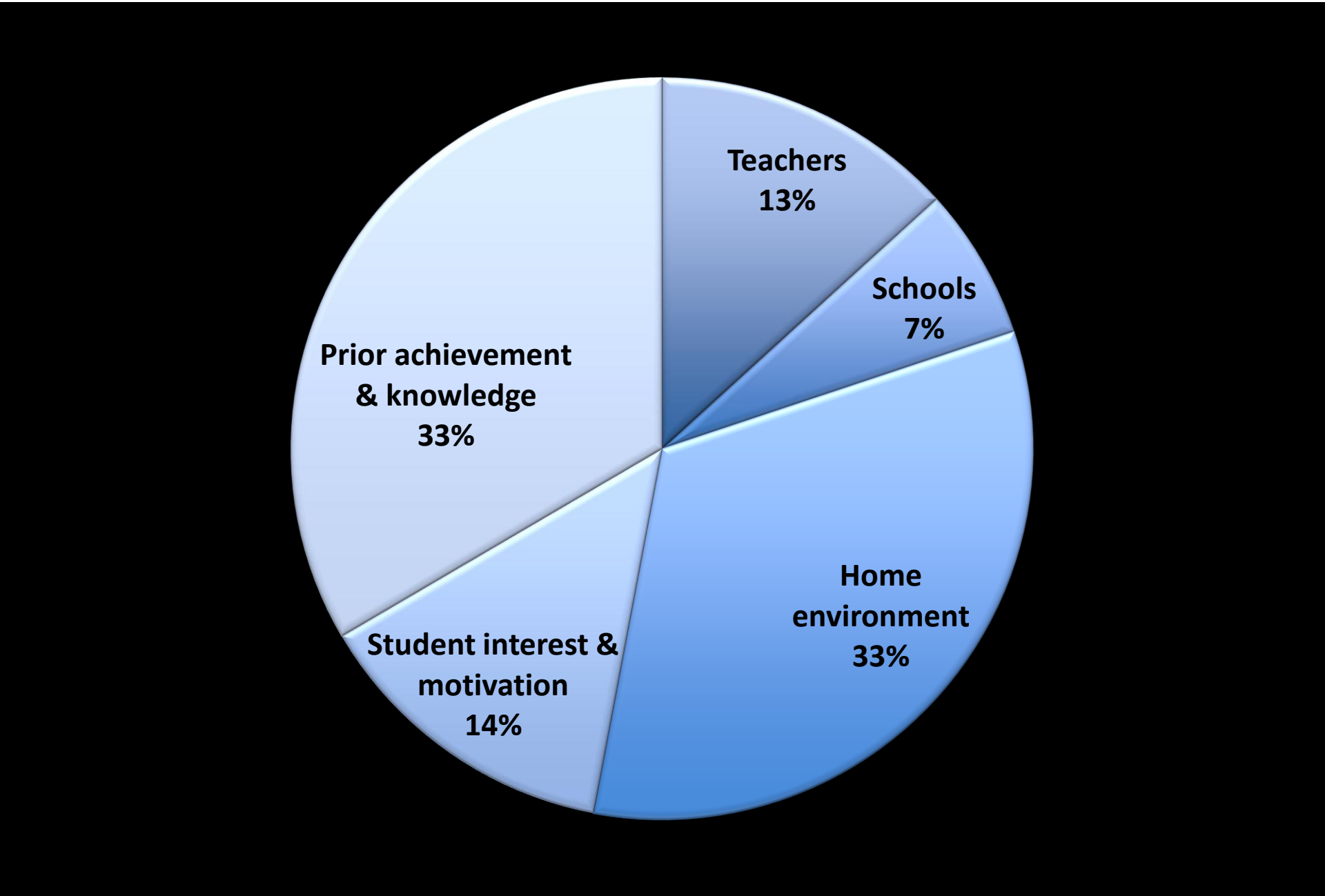


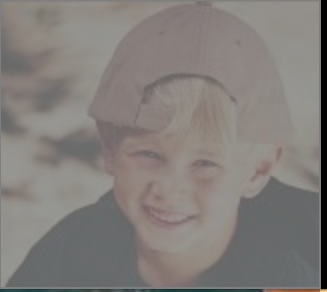
The touchstones

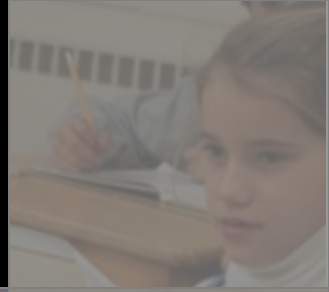
- Setting high expectations and delivering challenging instruction
- Fostering engaging learning environments and meaningful relationships with students
- Intentionally matching instructional strategies to learning objectives

Factors Related to Student Success

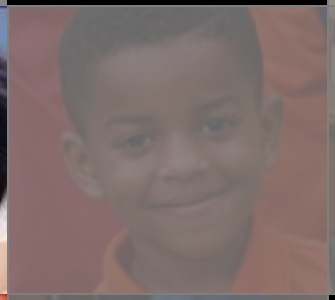
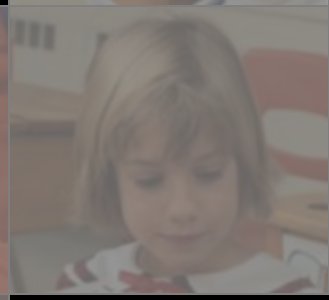
(% variance in achievement)



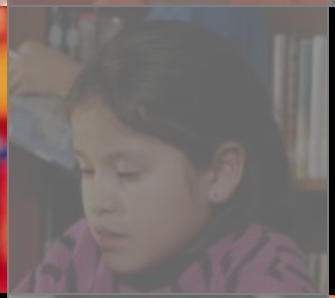


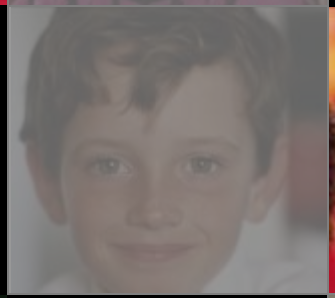




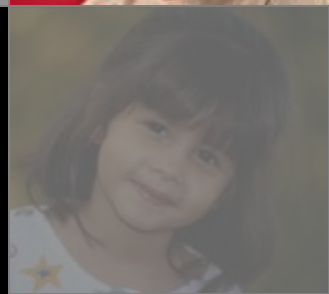





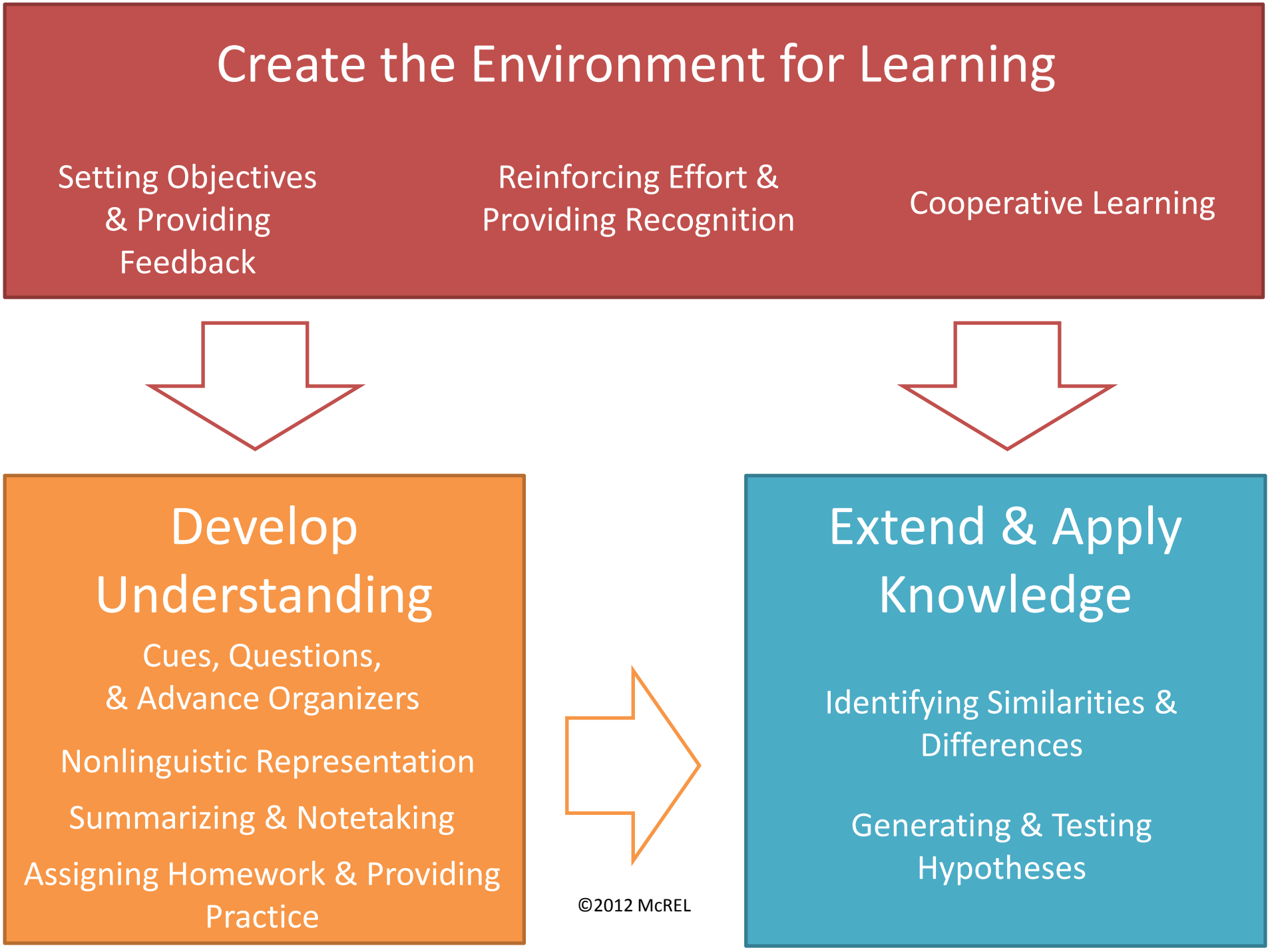








Category	Average Effect Size	Percentile Gain	Number of Studies
Identifying Similarities & Differences	1.61	45	31
Summarizing & Note Taking	1.00	34	179
Reinforcing Effort & Providing Recognition	.80	29	21
Homework & Practice	.77	28	134
Nonlinguistic Representation	.75	27	246
Cooperative Learning	.73	27	122
Setting Objectives & Providing Feedback	.61	23	408
Generating & Testing Hypotheses	.61	23	63
Cues, Questions, & Advance Organizers	.59	22	1251


Create the Environment for Learning
Setting Objectives & Providing Feedback
Reinforcing Effort & Providing Recognition
Cooperative Learning
Develop Understanding
Cues, Questions, & Advance Organizers
Nonlinguistic Representation
Summarizing & Notetaking
Assigning Homework & Providing Practice
Extend & Apply Knowledge
Identifying Similarities & Differences
Generating & Testing Hypotheses
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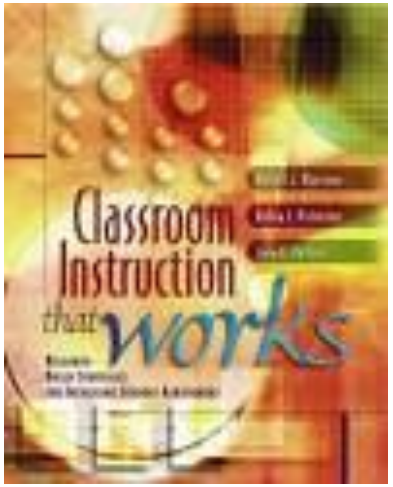
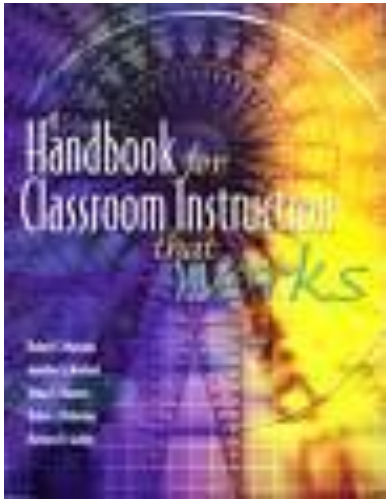
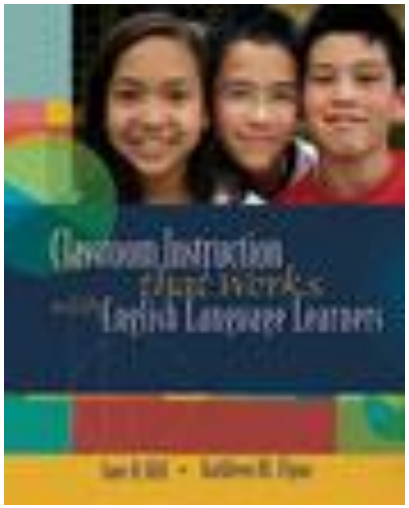
Books based on the 1998 meta-analysis



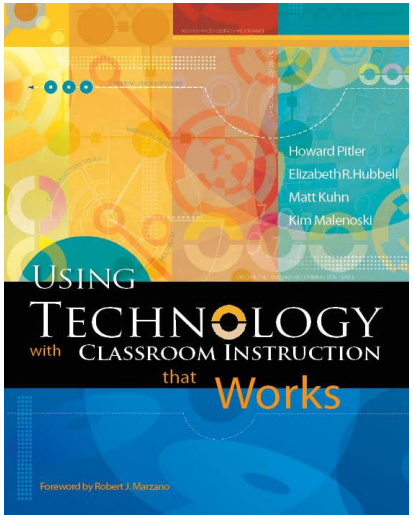
2001



2004



2006



2007

January 2012

August 2012

October2012

Learning Objectives
Day One

By the end of the learning session, we will:

- ***Know the categories of strategies that comprise the component of Creating the Environment for Learning,***
- ***Understand the classroom recommendations for each of the strategies,***
- ***Make connections between and among the strategies,***
- ***Transfer the learning into specific changes in your pedagogy that you will apply in the next two weeks.***

Personal Learning Goals for the Workshop

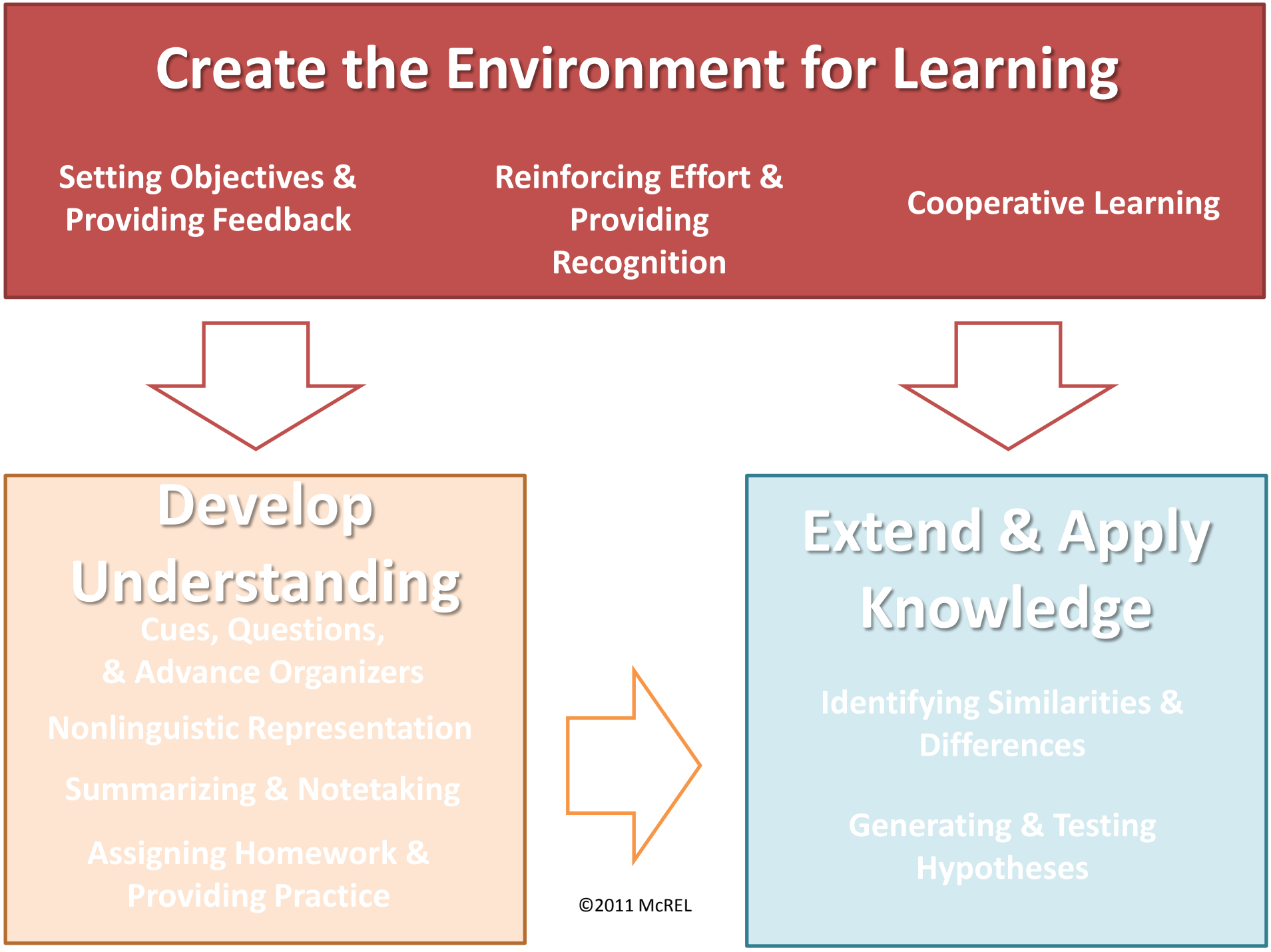
- What are **YOUR** goals for this workshop?

- What do you need to do to reach **YOUR** goals?

Discuss

Which strategy do you feel most confident using in your classroom?

How do you know the strategy is working?


Create the Environment for Learning
Setting Objectives & Providing Feedback
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Develop Understanding
Cues, Questions, & Advance Organizers
Nonlinguistic Representation
Summarizing & Notetaking
Assigning Homework & Providing Practice
Extend & Apply Knowledge
Identifying Similarities & Differences
Generating & Testing Hypotheses

Setting Objectives

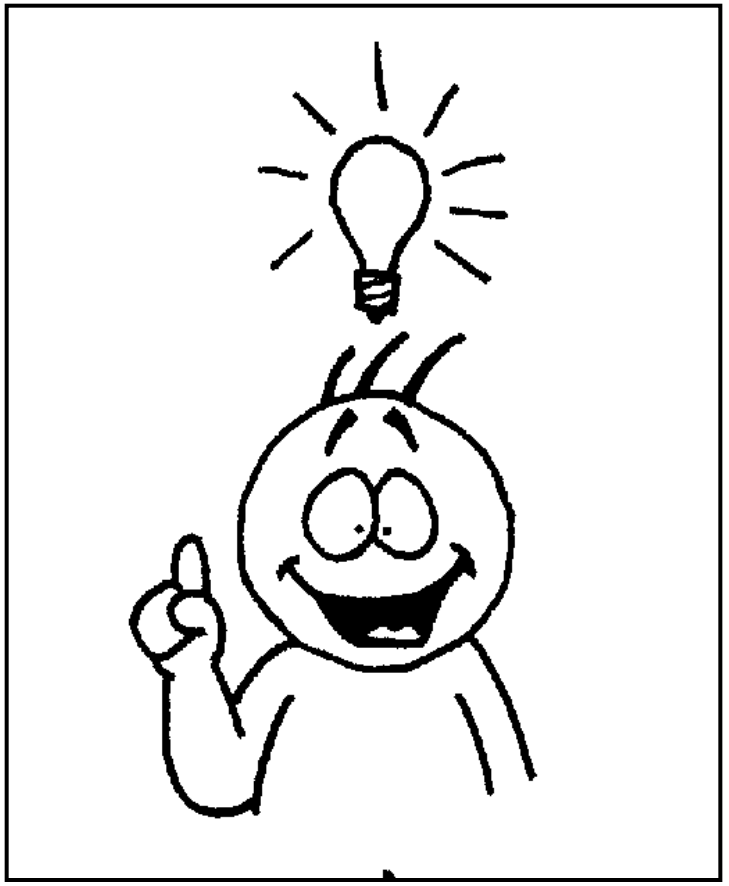
(Think), Write, Pair, and Share

Before we begin, please answer the following:

How do I let students know what they are supposed to learn in lessons or units?

Setting Objectives

- Gives students clear direction for their learning
- Helps students to identify personal interests within the context of the lesson



Classroom Recommendations

- Set learning objectives that are specific but not restrictive.
- Communicate the learning objectives to students and parents.
- Connect the learning objectives to previous and future learning.
- Engage students in setting personal learning objectives.

Set learning objectives that are specific but not restrictive

COMMON CORE STATE

Operations and Algebraic Thinking 4.OA

Generate and analyze patterns.

5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.*

Set learning objectives that are specific but not restrictive

COMMON CORE STATE

Operations and Algebraic Thinking 4.OA

Generate and analyze patterns.

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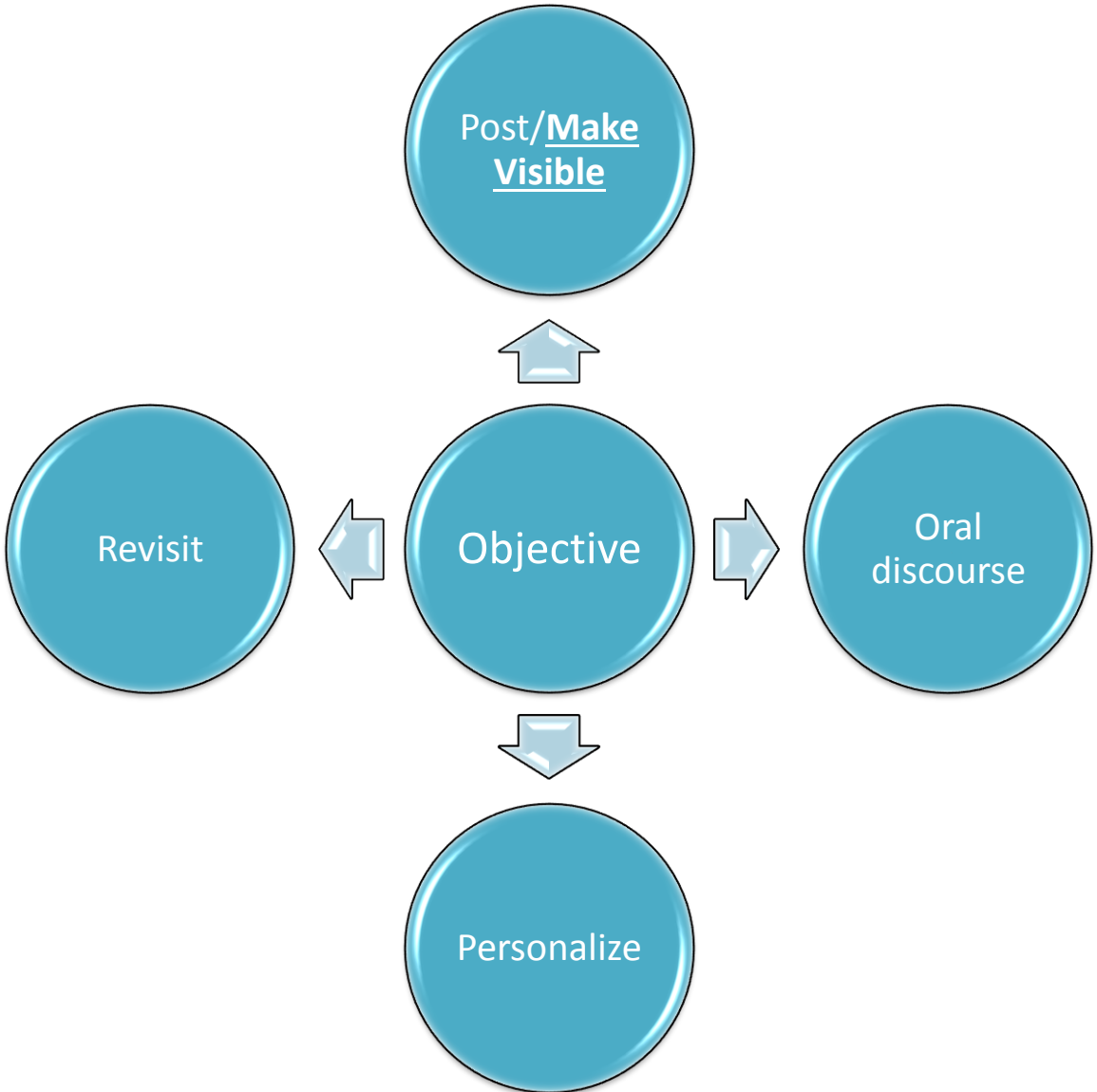
McREL Compendium of Standards

www.mcrel.org/compendium

Communicate the Learning Objectives to Students…



Physics

HippoCampus Blog

TUESDAY, JANUARY 17, 2012

AP Physics Challenge Circuits

Learning Objectives

Students will build several circuits using switches and principles of series and parallel circuitry.

Activity Type

This activity would best be used as an introduction to circuits and electricity. No previous experience in electricity or circuits is required

TEACHING PHYSICS BLOG

Email address... Submit

ANDREW VANDEN HEUVEL

Andrew Vanden Heuvel teaches AP physics and astronomy for the Michigan Virtual School. In 2011 he was named a finalist for the National Online Teacher of the Year award.

http://hippocampusphysics.blogspot.com/

Connect the Learning Objectives to Previous and Future Learning

COMMON CORE STATE

Operations and Algebraic Thinking **4.OA**

Generate and analyze patterns.

5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.*

3rd Grade

Solve problems involving the four operations, and identify and explain patterns in arithmetic.

8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.[3]

9. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*

5th Grade

Analyze patterns and relationships.

3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.*

Engage Students in Setting Personal Learning Objectives

Personal Learning Goals for the Workshop

- *What are **YOUR** goals for this workshop?*
- *What do you need to do to reach **YOUR** goals?*

Assist students as they personalize the objective

1. I want to be a better problem solver in math.
2. I want to know more about linear equations.
3. I want to know how to solve linear equations. I can do this by working with a partner and asking questions when I don't understand.
4. I want to be better at identifying variables.

Setting Objectives Activity

- **On page 40-42 you will find objectives sheets. Pick the sheet from your grade level. Read the sample objectives and activities. Then write a student appropriate objective for a few of them as a table team.**

Things to consider:

Do I consistently post the learning objective?

Do I consistently talk about the learning objective with my students?

Do I consistently have students personalize the objective?

Do I consistently reference the objective throughout my lesson?

Things to consider:

Is there consistency in my school in posting the learning objective?

Is there consistency in my school in the “grain size” that is posted?

Is there consistency in my school in where the objective is posted?

Is there consistency in my school expecting teachers to reference the objectives during their lessons?

Reflecting on Practice

Individually complete the first section on your Key Knowledge handout.

Be prepared to share one of your thoughts with the group.

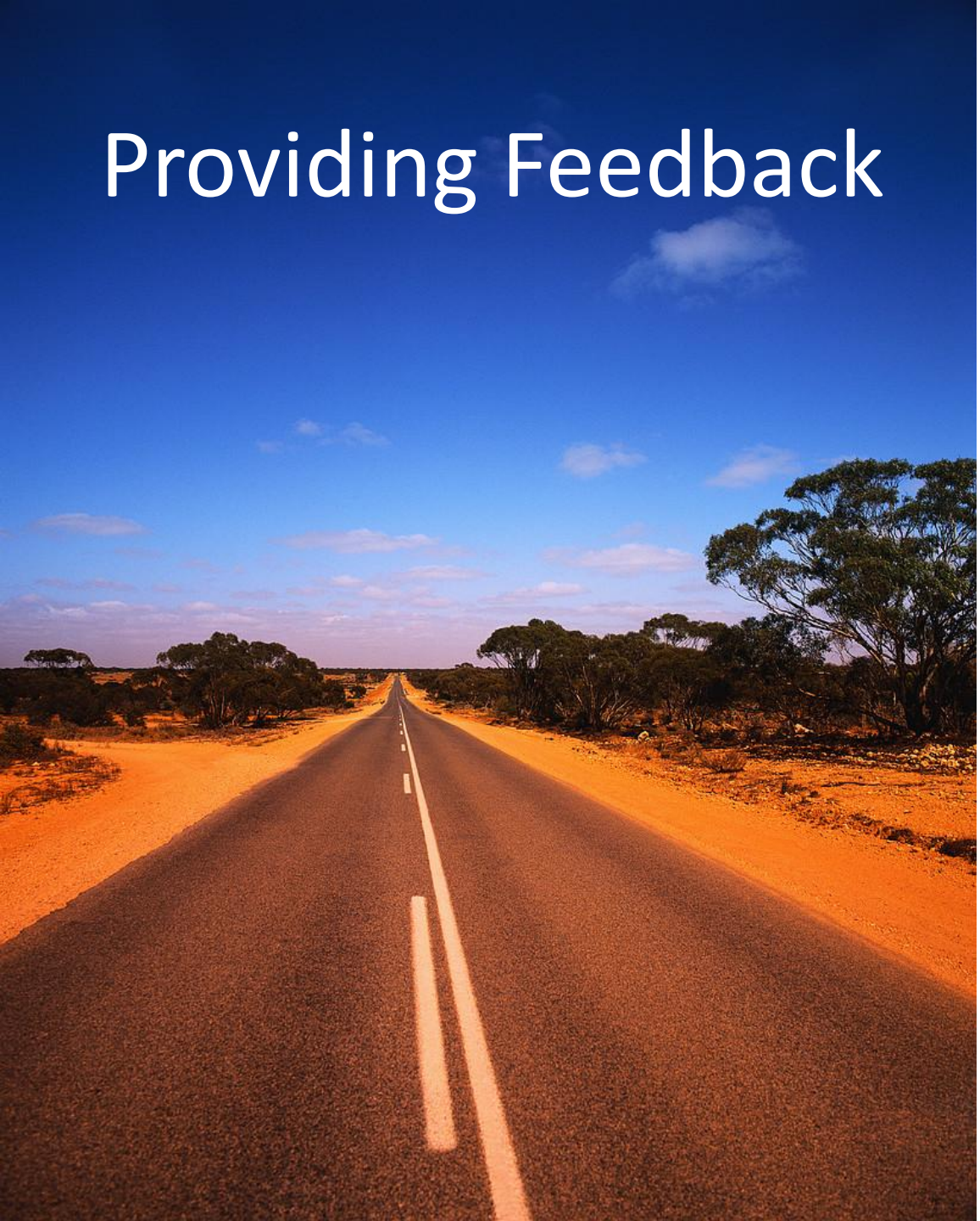
Learning Objectives
Day One

By the end of the learning session, we will:

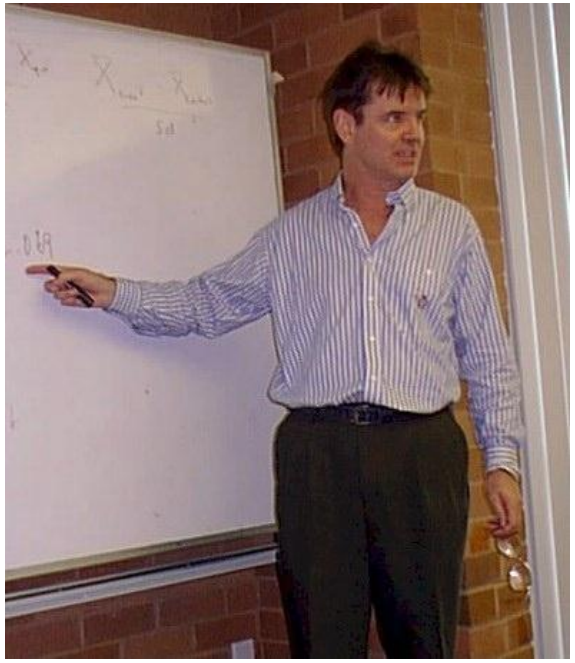
- ***Know the categories of strategies that comprise the component of Creating the Environment for Learning,***
- ***Understand the classroom recommendations for each of the strategies,***
- ***Make connections between and among the strategies,***
- ***Transfer the learning into specific changes in your pedagogy that you will apply in the next two weeks.***


Setting Objectives
Providing Feedback

Providing Feedback



Providing information about how well students are performing relative to a particular learning objective so that they can improve their performance.



"The most powerful single innovation that enhances achievement is feedback. The simplest prescription for improving education must be 'dollops' of feedback."

Classroom Recommendations

Provide feedback that addresses what is correct and elaborates on what students need to do next.

Provide feedback appropriately in time to meet students' needs.

Provide feedback that is criterion-referenced.

Engage students in the feedback process.

Name Text Richards

Skill: Multiplying 2-digit by 2-digit numbers, Regrouping

Score 15

F

Solve by multiplying.

67
x 32
134
2010
2,144

A. 31 x 23 = 713

B. 90 x 58 = 5220

C. 53 x 20 = 1060

D. 71 x 46

E. 52 x 44 = 2288

F. 82 x 64 = 5248

G. 68 x 70 = 5320

I. 73 x 25

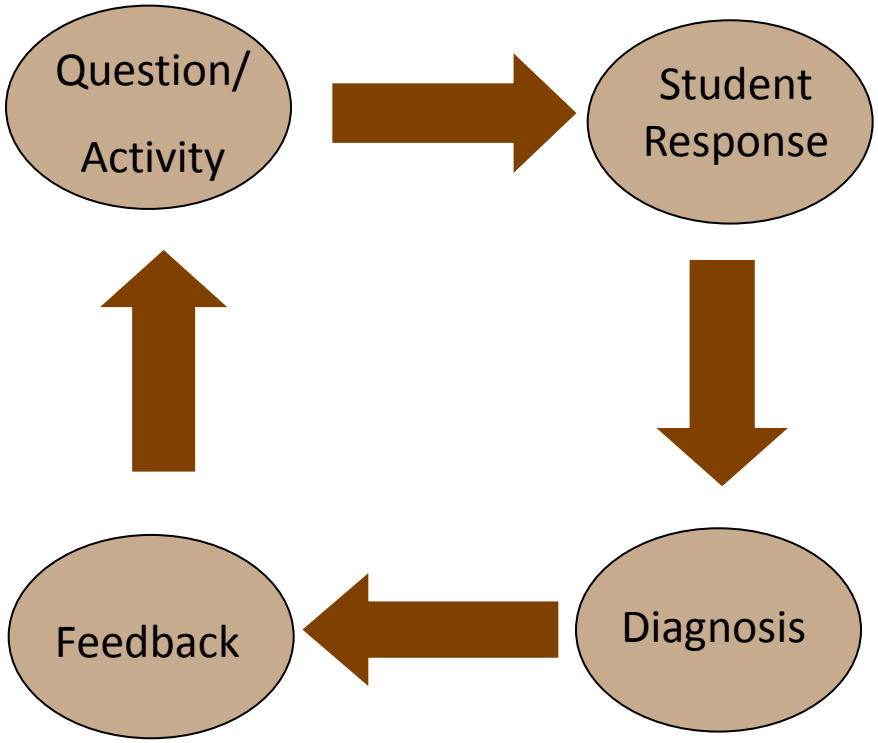
J. 59 x 66

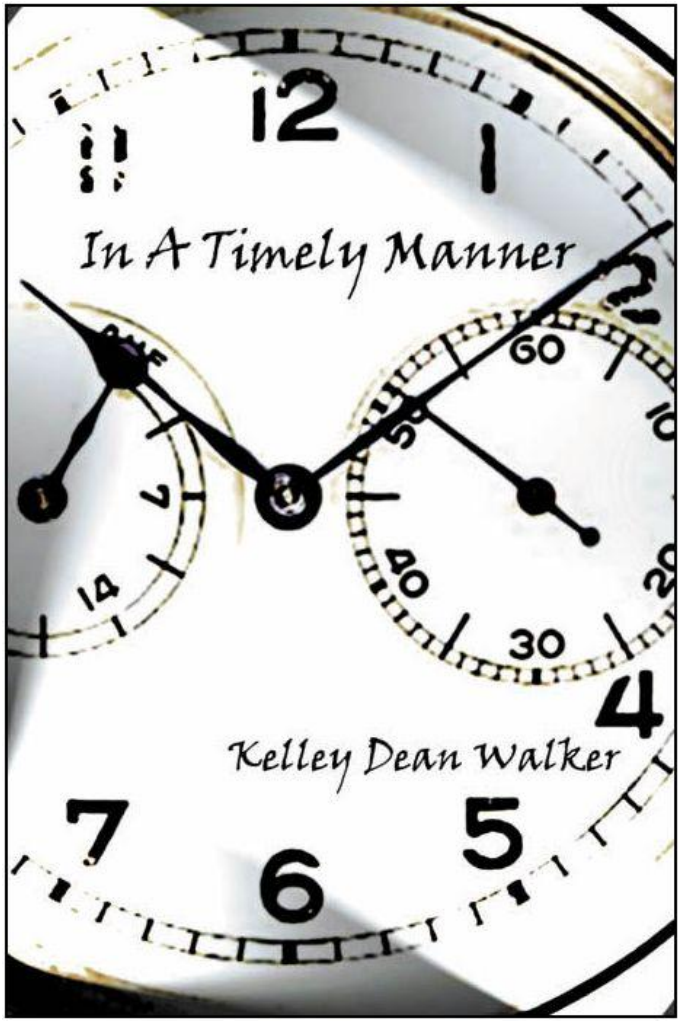
K. 25 x 18

O. 99

Research Results For Corrective Feedback				
Synthesis Study	Focus	No. Of Feedback Studies	Ave. ES	Percentile Gain
Types Of Feedback	Right/wrong answer	6	-.08	-3
	Correct answer	39	.22	9
	Repeat until correct	4	.53	20
	Explanation	9	.53	20

Provide Timely Feedback





The timing of feedback appears to be crucial to its effectiveness. Feedback given *immediately after a test situation* is best. The more delay that occurs in giving feedback, the less improvement there is in achievement.

Research Results For Corrective Feedback				
Synthesis Study	Focus	No. Of Studies	Ave. ES	Percentile Gain
Timing Of Feedback	Immediately after item	49	.19	7
	Immediately after test	2	.72	26
	Delayed after test	8	.56	21

Provide feedback that is criterion-referenced.

SCORING RUBRIC		
4		Exemplary performance that exceeds the targeted level of performance.
3	Desired Level of Performance	Solid performance that meets the targeted level of performance.
2		Performance that is emerging or developing towards the targeted level of performance.
1		Performance in which an attempt was made but there are some serious misconceptions or errors.
0		No judgment can be made about the student's level of performance.

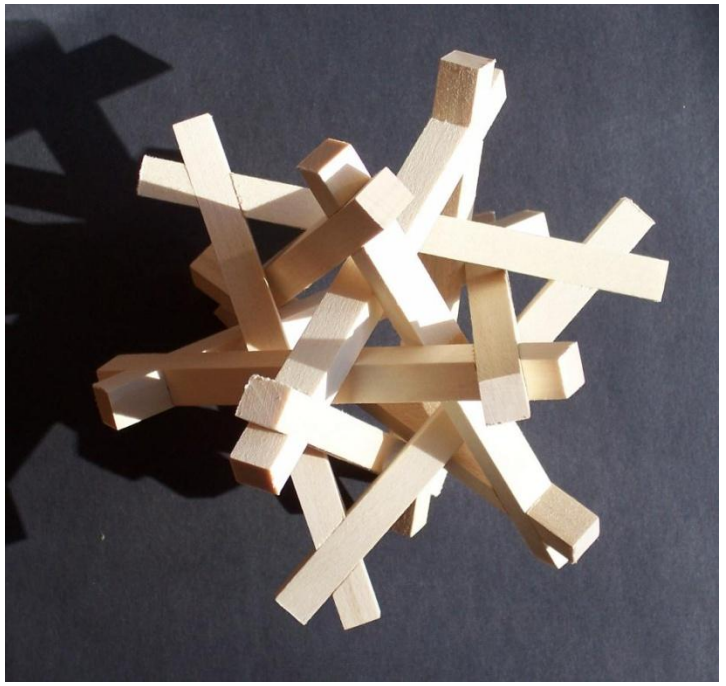
Rubric for a Perfect Cup of Coffee

4	A large, steaming cup of café mocha with fresh whipped cream served in a Royal Daulton china cup by an attractive person on the deck of a private yacht off the coast of Spain.
3	A large cup of Starbuck's Blend coffee with caramel syrup served in a ceramic mug by a waiter in the dining room at my favorite restaurant.
2	A cup of SHESC's coffee with creamer in a paper cup served by me at my desk on a typical day in the office.
1	A cup of cold, two-day old instant coffee with grounds floating on the top in a styrofoam cup.

http://rubistar.4teachers.org

Engage students in the feedback process.

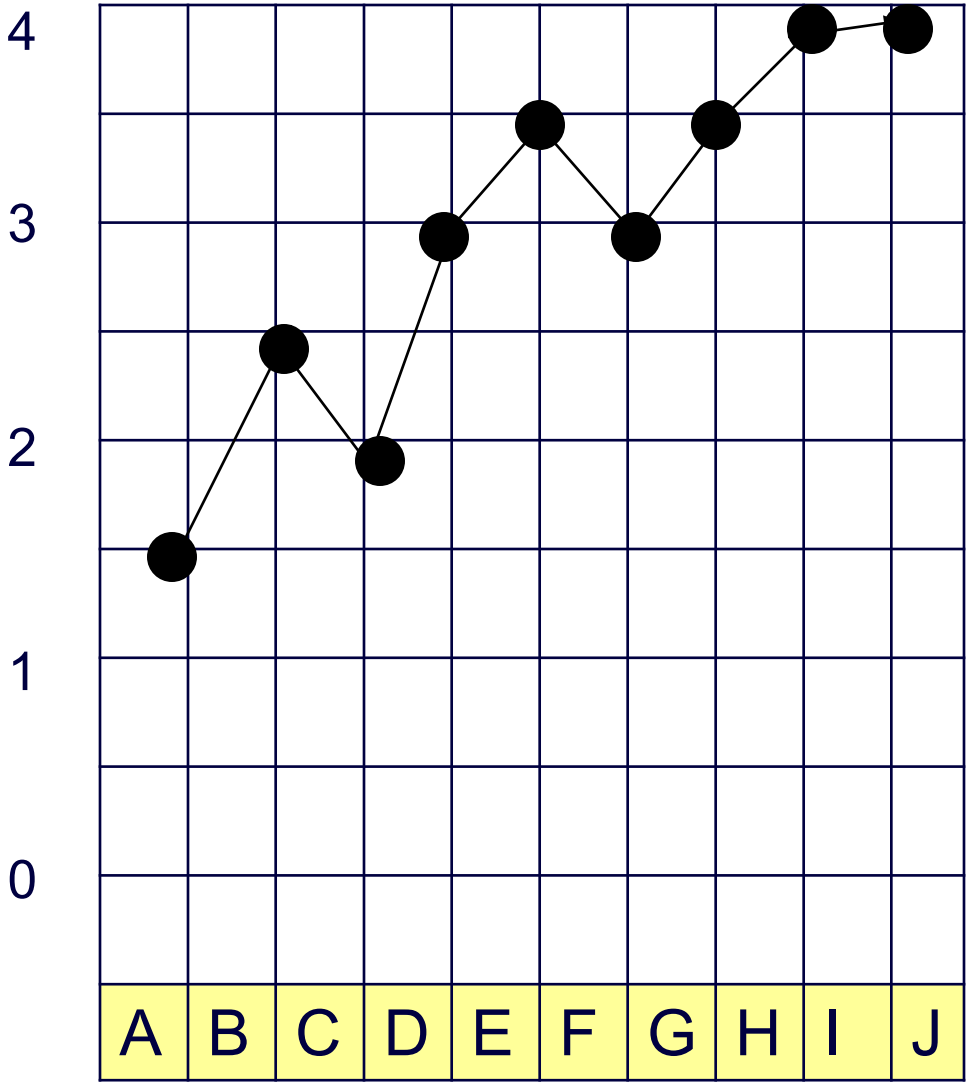
- **Peer assessment**
- **Self-assessment**



Benchmark Adds and subtracts simple fractions

My Goal: To reach a 3 by March 17th.

A March 3
B March 4
C March 6
D March 7
E March 11
F March 14
G March 17
H March 19
I March 24



SELF- ASSESSMENT

Name _____Date _____

Task _____

What did I hope to accomplish?

How hard did I work toward the task?

What was the best part of what I did?

What would I do different next time?

What do I need to work on now?

Discussion

How do I teach my students to use and provide feedback?

What opportunities do I give my students for self-assessment?

What opportunities do I give my students for peer-assessment?

What improvements could I make in these processes?

Reflecting on Practice

Individually complete the second section on your Key Knowledge handout.

Be prepared to share one of your thoughts with the group.

Learning Objectives
Day One

By the end of the learning session, we will:

- ***Know the categories of strategies that comprise the component of Creating the Environment for Learning,***
- ***Understand the classroom recommendations for each of the strategies,***
- ***Make connections between and among the strategies,***
- ***Transfer the learning into specific changes in your pedagogy that you will apply in the next two weeks.***

Talk to others and put the pieces together.

Stand and Discuss

- Find someone at a different table.
- Together, think of an individual you consider to be successful.
- Discuss what most contributed to that person's success.

People attribute success to:

- *Ability*
- *Luck*
- *Other People*
- *Effort*

Eccles, Wigfield, & Schiefele, 1998

REINFORCING EFFORT

Enhances students' understanding of the relationship between effort and achievement by addressing students' attitudes and beliefs about learning.

Classroom Recommendations

Teach students about the relationship between effort and achievement.

Provide students with explicit guidance about what it means to expend effort.

Ask students to keep track of their effort and achievement.

Self-Assessment

Name Taylor Date 2-~~10~~ 9-06

Think about your effort in class over the past two weeks. Consider the statements and circle the score that best reflects your effort. Once you have completed this task, consider the grades you have received the past two weeks. Read the sentence in the bottom box and circle the answer that represents your thinking. Write has this self-assessment has help you make any connections between your effort and achievement.

	Exceeds	Meets	Moving toward	Does not meet
I completed assignments on time	3	2	1 (circled)	0
I learned information I did not know before	3 (circled)	2	1	0
I will use the information to learn more about the topic	3	2 (circled)	1	0
I care about my grades	3 (circled)	2	1	0
I put forth the right amount of effort	3	2 (circled)	1	0

My grades reflect the amount and time of effort I put into it.

Strongly Agree | Agree (circled) | Disagree | Strongly Disagree

How has this self-assessment helped you make connections between your effort and achievement?

Well I see now that I need to start doing more And paying more Attention.

Name Ashlie Date 2/09/06

Think about your effort in class over the past two weeks. Consider the statements and circle the score that best reflects your effort. Once you have completed this task, consider the grades you have received the past two weeks. Read the sentence in the bottom box and circle the answer that represents your thinking. Write has this self-assessment has help you make any connections between your effort and achievement.

	Exceeds	Meets	Moving toward	Does not meet
I completed assignments on time	3	(2)	1	0
I learned information I did not know before	(3)	2	1	0
I will use the information to learn more about the topic	3	(2)	1	0
I care about my grades	(3)	2	1	0
I put forth the right amount of effort	(3)	2	1	0

My grades reflect the amount and time of effort I put into it.

(Strongly Agree) Agree Disagree Strongly Disagree

How has this self-assessment helped you make connections between your effort and achievement?

It helped because I realized how I'm actually doing in school and out side of school.

	EFFORT	ACHIEVEMENT
4 Excellent	**I worked on the task until it was completed. I pushed myself to continue working on the task even when difficulties arose or a solution was not immediately evident. I viewed difficulties as opportunities to strengthen my understanding.**	**I exceeded the objectives of the task or lesson.**
3 Good	**I worked on the task until it was completed. I pushed myself to continue working on the task even when difficulties arose or a solution was not immediately evident.**	**I met the objectives of the task or lesson.**
2 Needs Improvement	**I put some effort into the task, but I stopped working when difficulties arose.**	**I met a few of the objectives of the task or lesson but did not meet others.**
1 Unacceptable	**I put very little effort into the task.**	**I did not meet the objectives of the lesson.**

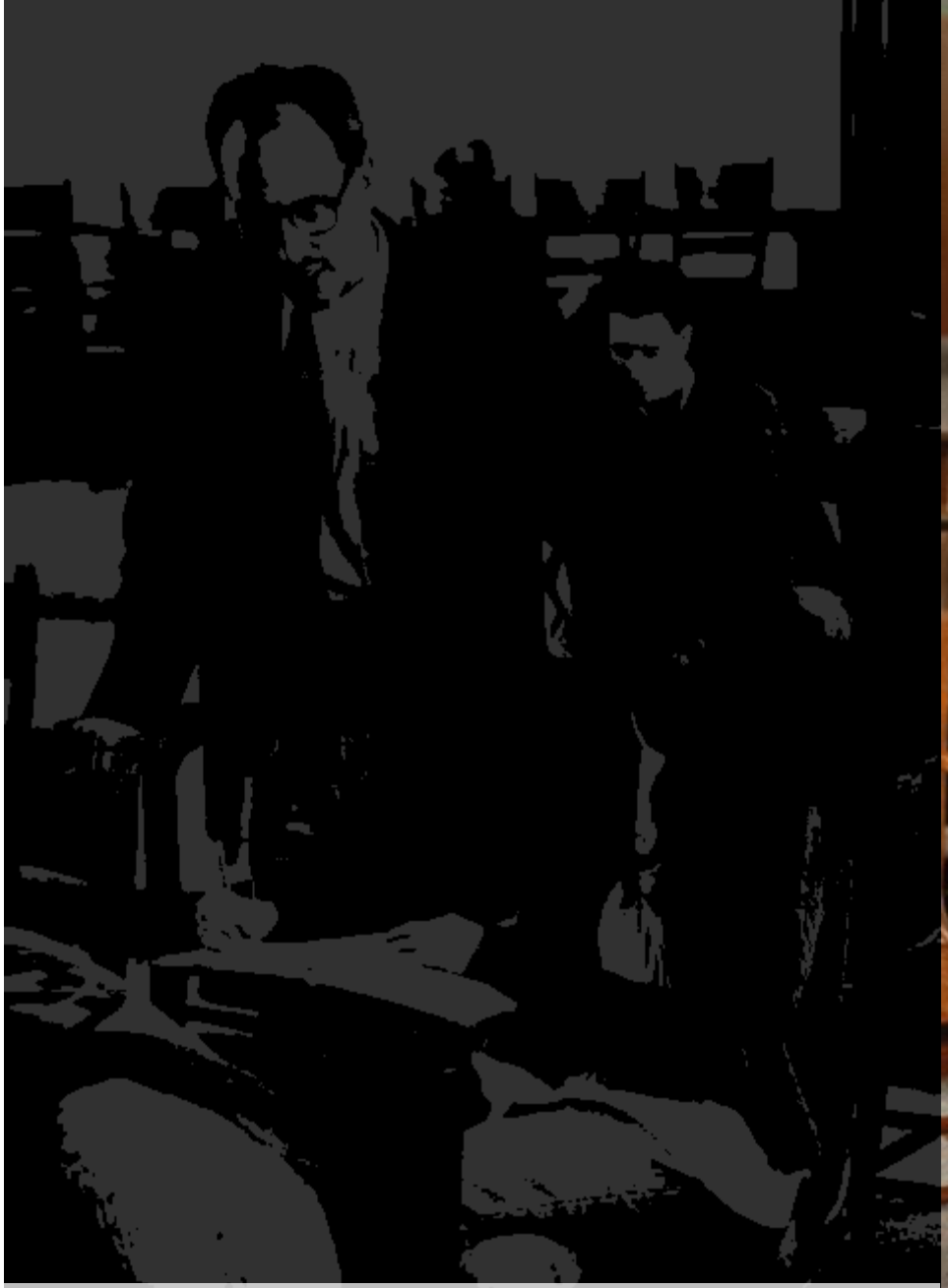
Rubric ID: **1831460**

Effort on Math Facts

CATEGORY	**4 Advanced**	**3 Proficient**	**2 Basic**	**1 Below Basic**
Attitude - I feel positive about working on my math facts.	I always have a positive attitude about learning my math facts.	I often have a positive attitude about learning my math facts.	I usually have a positive attitude about learning my math facts.	I often have a negative attitude about learning my math facts.
Commitment - I think working hard will pay off.	I practice math facts at home 5 or more times a week.	I practice math facts at home 3 -4 times a week.	I practice math facts at home 2 times a week.	I practice math facts at home 0 - 1 time a week.
Pride - I feel satisfied when I improve on my math facts.	I try my hardest all of the time when practicing my math facts and my weekly score improves 5 points or more.	I try my hardest most of the time when practicing my math facts and my weekly score improves 3 points or more.	I try my hardest some of the time when practicing my math facts and my weekly score stays the same.	I do not try very hard when practicing my math facts and my weekly score goes down.

Date Created: **October 22, 2009**
Date Last Modified: **November 23, 2009**


ACHIEVEMENT
EFFORT
0
1
2
3
4
5
6
7
8
9
10



Dweck, C. (2006). *Mindset* (p. 71–72). New York: Random House.

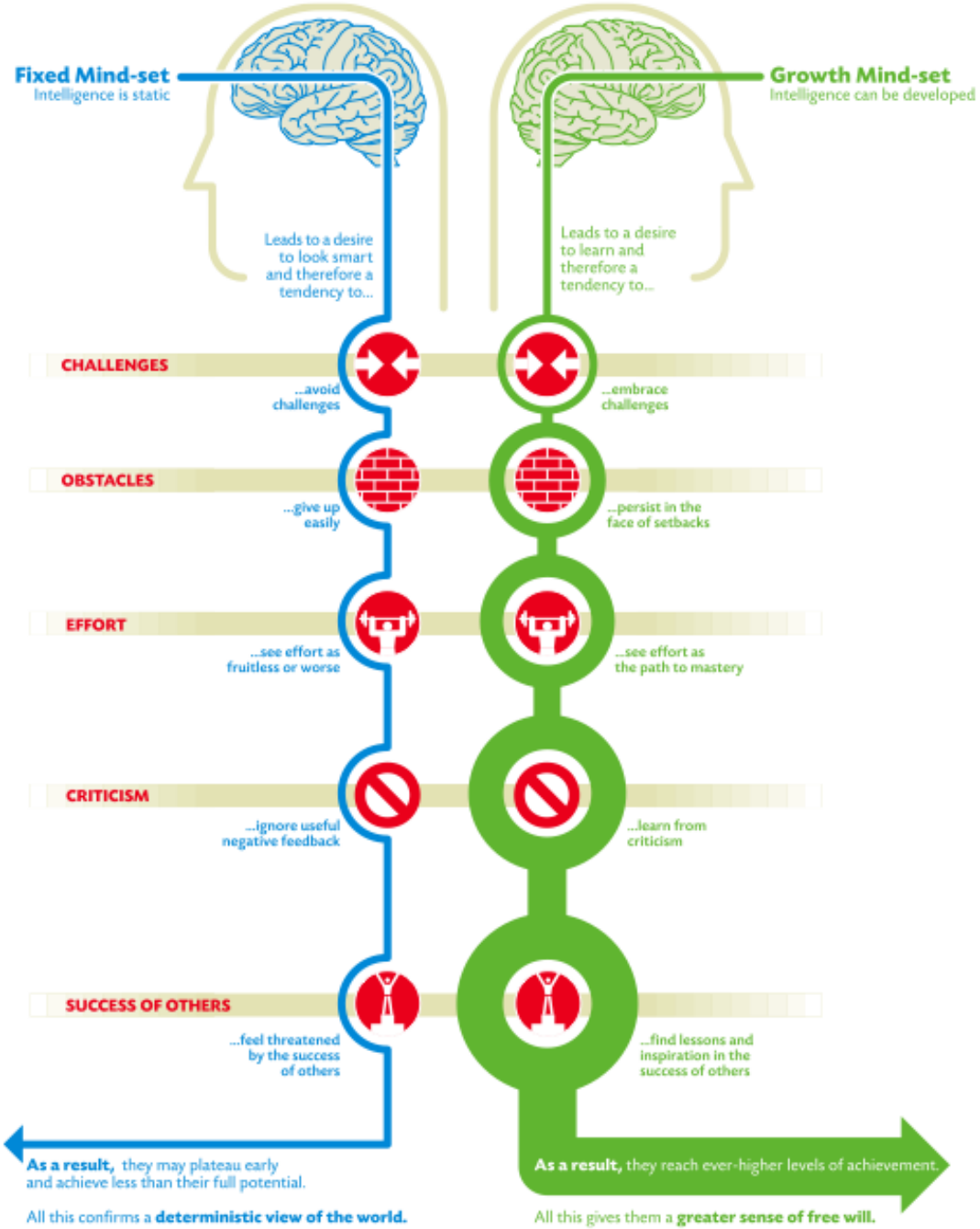
Wow. You got 8 right. That's a really good score. You must have *worked* really hard at this.

Final Word Protocol

Controlling Their Destinies: Helping Students Believe in the Importance of Effort

By Elizabeth Ross Hubbell

Lynn is a 9th-grade student struggling through several of her courses, with pre-algebra presenting the biggest challenge. Up until this point, she has gotten by with acceptable grades, but this year seems different. Some of her friends are taking more challenging courses, focusing on their grades, and discussing their plans for college. Other friends, however, are talking a lot about how much they dislike school. Lynn's parents have always been strict about not getting *Ds* and *Fs*, and as long as she maintained *Bs* and *Cs*, they were satisfied with her grades. Now on the verge of bringing home a *D-* in pre-algebra, Lynn is beginning to wonder if college is for her. She has heard her parents say time and again how they were never good at math. Perhaps, she thinks, it's not her fault that she finds it so challenging. She is beginning to see more


Fixed Mind-set
Intelligence is static
Growth Mind-set
Intelligence can be developed
Leads to a desire to look smart and therefore a tendency to...
Leads to a desire to learn and therefore a tendency to...
CHALLENGES
...avoid challenges
...embrace challenges
OBSTACLES
...give up easily
...persist in the face of setbacks
EFFORT
...see effort as fruitless or worse
...see effort as the path to mastery
CRITICISM
...ignore useful negative feedback
...learn from criticism
SUCCESS OF OTHERS
...feel threatened by the success of others
...find lessons and inspiration in the success of others
As a result, they may plateau early and achieve less than their full potential.
All this confirms a deterministic view of the world.
As a result, they reach ever-higher levels of achievement.
All this gives them a greater sense of free will.
GRAPHIC BY NIGEL HOLMES

Write, pair, share . . .

- Think of a time you dealt with a parent or colleague with a fixed mindset. How did that person's perception impact that student or students?
- Now think of a time you dealt with a parent or colleague with a growth mindset. How did that person's perception impact that student or students?

Reflecting on Practice

Individually complete the third section on your Key Knowledge handout.

Be prepared to share one of your thoughts with the group.

Learning Objectives
Day One

By the end of the learning session, we will:

- ***Know the categories of strategies that comprise the component of Creating the Environment for Learning,***
- ***Understand the classroom recommendations for each of the strategies,***
- ***Make connections between and among the strategies,***
- ***Transfer the learning into specific changes in your pedagogy that you will apply in the next two weeks.***

Providing Recognition

Classroom Recommendations

Promote a mastery-goal orientation.

Provide praise that is specific and aligned with expected performance and behaviors.

Use concrete symbols of recognition.

Promote a Mastery-goal Orientation

Emphasize personal mastery instead of competition between students.

Make the learning environment more predictable.

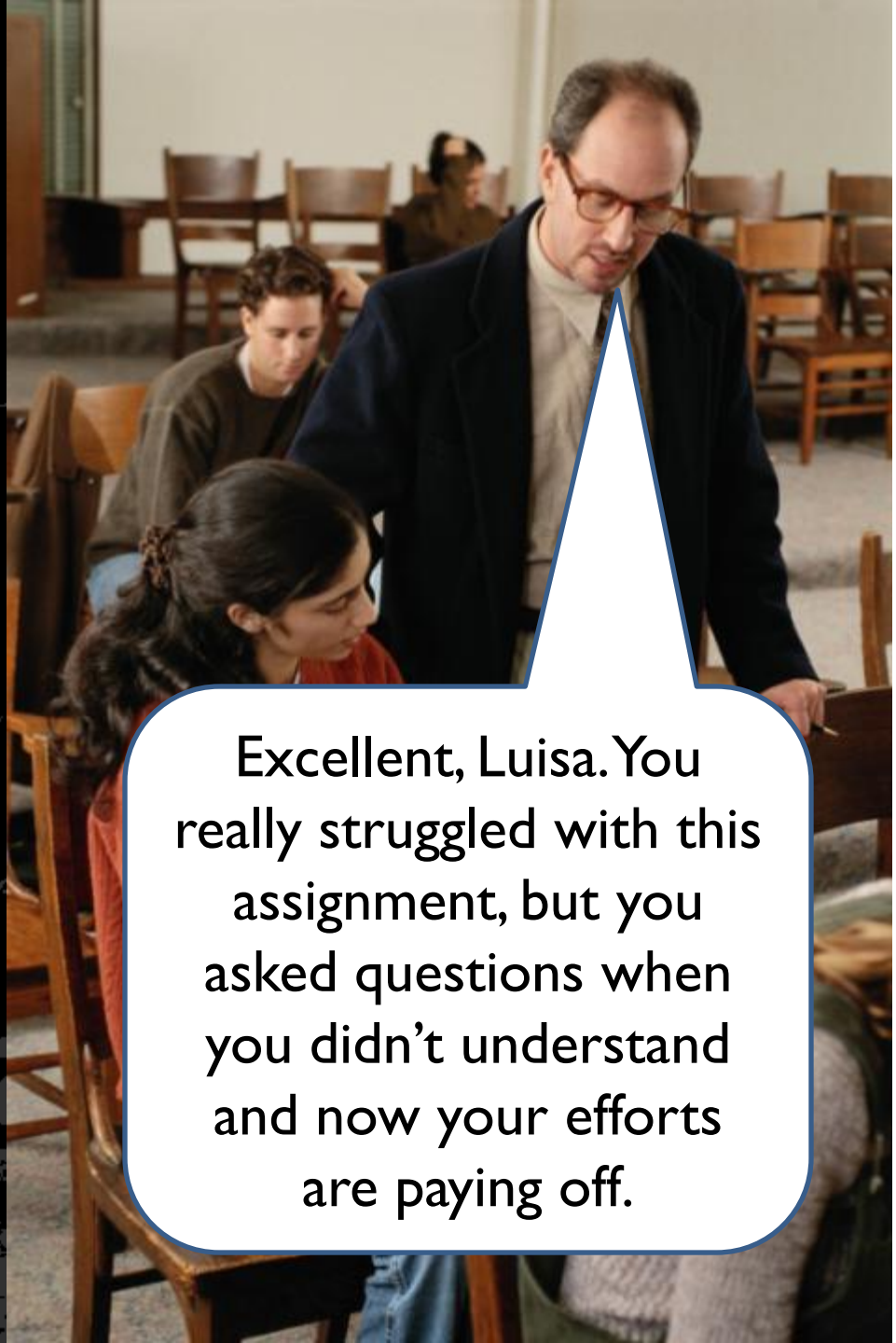
Design learning activities for different levels of learning.

Provide praise that is specific and aligned with expected performance and behaviors.

Be sincere when offering praise.

Link effort to accomplishments and accomplishments to motivation.

Be cognizant of age and culture preferences.


Excellent, Luisa. You really struggled with this assignment, but you asked questions when you didn't understand and now your efforts are paying off.

- How did recognition change the motivation of Brian's students?
- In what ways did Brian's students receive recognition from outside of the classroom?
- What's keeping you from doing this?

Offer Concrete Symbols of Recognition

Increase intrinsic motivation by providing tangible rewards when appropriate.

Use rewards to recognize the quality of student work and progress toward the learning objective

Vary the types of rewards you provide.

Reflecting on Practice

Individually complete the fourth section on your Key Knowledge handout.

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Handshake Activity

- **Greet** someone in the group with a handshake.
- **Introduce** yourself.
- **Complete** the following statement:

How will I change my practice next week because of this information?

Cooperative Learning

Provides students with opportunities to interact with each other in groups in ways that enhance their learning.

Classroom Recommendations

Include elements of positive interdependence and individual accountability.

Organize groups of two to five students.

Use cooperative learning consistently and systematically.

Two defining elements of Cooperative Learning

Positive interdependence

Individual accountability

Jigsaw v. Broken Squares

	Jigsaw	Broken Squares
Positive interdependence		
Individual accountability		

Cooperative Learning Rubrics

	Beginning 1	Developing 2	Accomplished 3	Exemplary 4	Score
Responsibilities					
Fulfills Team Role & Duties	Does not perform any duties of assigned team role	Performs some duties	Performs all duties	Performs all duties & helps others	
Participates in Action Planning	Does not participate in planning even after encouragement	Participates in planning after encouragement	Participates in planning without encouragement	Participates in planning & encourages others	
Shares Responsibilities	Does not fulfill responsibilities & relies on others to do their work	Fulfills some responsibilities	Fulfills responsibilities	Fulfills responsibilities & helps others	
Contributions					
Researches & Gathers Information	Collects information that does not relate to the topic	Collects very little information which relates to the topic	Collects some basic information which mostly relates to the topic	Collects a lot of information that relates to the topic	
Share Information					
Upholds Team Action Plan	Doesn't follow the team action plan	Follows the team action plan some of the time	Follows the team action plan	Follows the team action plan & helps others stay on track	

Rubric from NASA Science files

iste International Society for Technology in Education

Partnership for 21st Century Skills

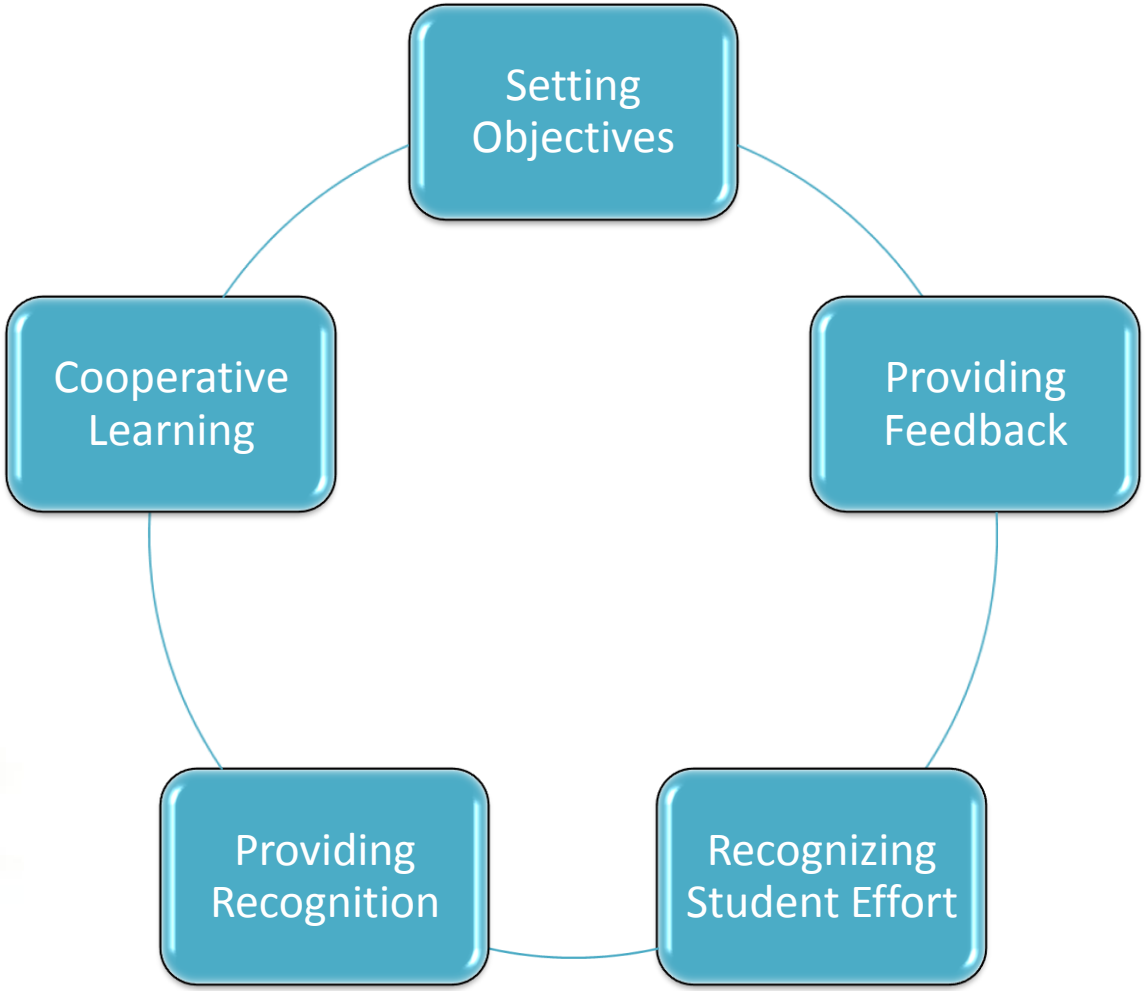
- **Communication and Collaboration**
  - Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.
- **Learning and Innovation**
  - Creativity and Innovation
  - Critical Thinking and Problem Solving
  - Communication and Collaboration

Reflecting on Practice

Individually complete the fifth section on your Key Knowledge handout.

Be prepared to share one of your thoughts with the group.

Creating an Environment for Learning



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Share with a Partner or Team

What are two things you will do differently next week?