Motivating Life-long Learners:
Rigor, Relevance and 21st Century Literacy for Secondary Teachers

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Note: Videos and images have been removed to reduced file size

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Agenda

- Rigor / Relevance
- Strategies in Action
  - Defining
  - Summarizing
  - Comparing
- How to use Strategies to Support Literacy

Word Cloud of 100 most frequently used words in my workshops
www.wordle.net

Staff development should model what you expect to see in the classroom

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Students are motivated by *Rigor*

Creating is the highest form of thinking.

Bloom's Taxonomy of Thinking Skills

- **Creating** -generating new ideas
- **Evaluating** - justifying a decision or choice
- **Analyzing** - breaking into component parts
- **Applying** - using information in a new setting
- **Understanding** - explaining idea or concept
- **Remembering** - recalling information

Creating

A new combination of old elements

Creating

A new combination of old ...information, stories, data, art, music, literature, strategies...

Students are motivated by *Relevance*

Taking responsibility for their learning

Slide 1

Learning is relevant
when the student:

- understands how this information or skill has some **application in their life.**
- has an opportunity to **follow their own process rather than just learn "the facts."**
- is not just learning content and skills, but is **learning how they learn.**

Slide 2

Motivating Life-long Learners

#1 factor for improving student motivation is choice.

Not whether the student does the assignment, but how they engage in the work.

~Doug Reeves

Slide 3

Justin, a second grader, talks about math

Justin

Math is when you add or subtract numbers. And your teacher will make sure you have the right answer.

From: Math Is Language Too:
Talking and Writing in the Mathematics Classroom
Phyllis Whitin

Slide 4

Question: A cruise ship carries 200 passengers and crew. Each life boat carries 30 people. **How many lifeboats will the ship need?**

Almost one-third of the 8th graders who took the NAEP math test answered

"6 remainder 20"

From a high school valedictorian:

"I could memorize very easily, and became valedictorian.

But I was embarrassed that I understood much less than some other students who cared less about grades.

I felt that my brain was a way station for material going in one ear and (after the test) out the other."

~ High School Student quoted in Wiggins and McTighe
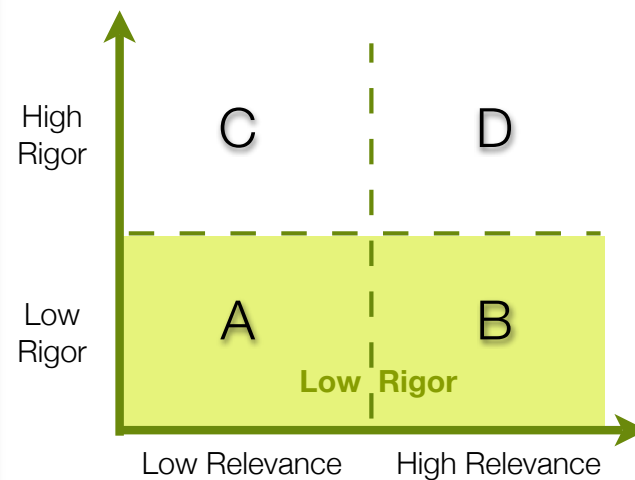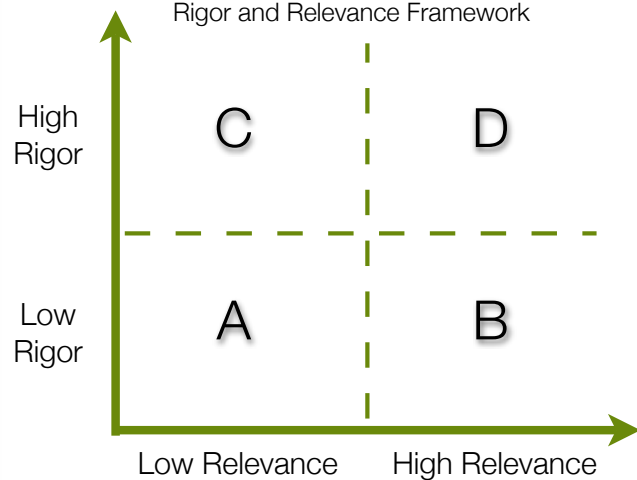*Understanding by Design*

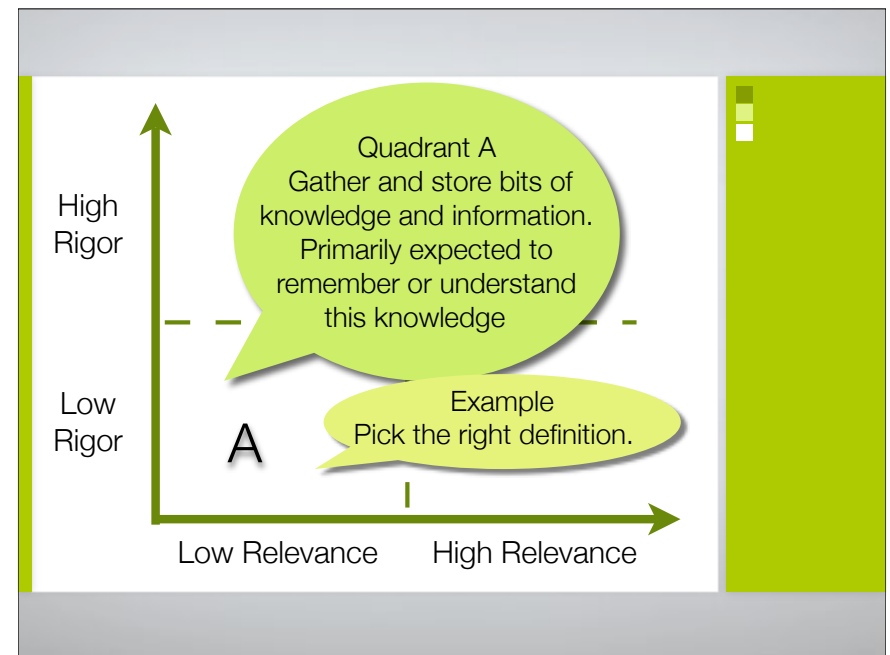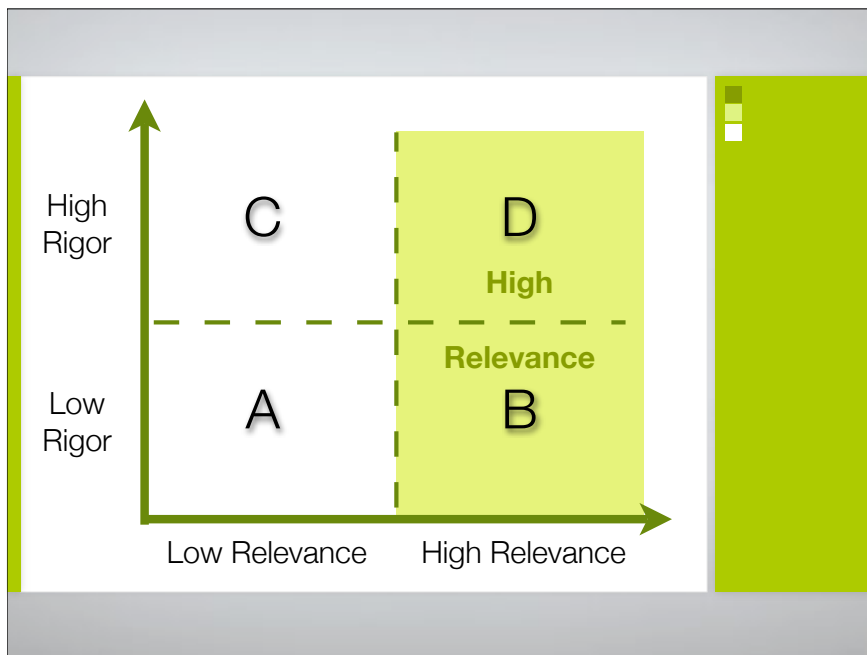## Move students toward greater relevance

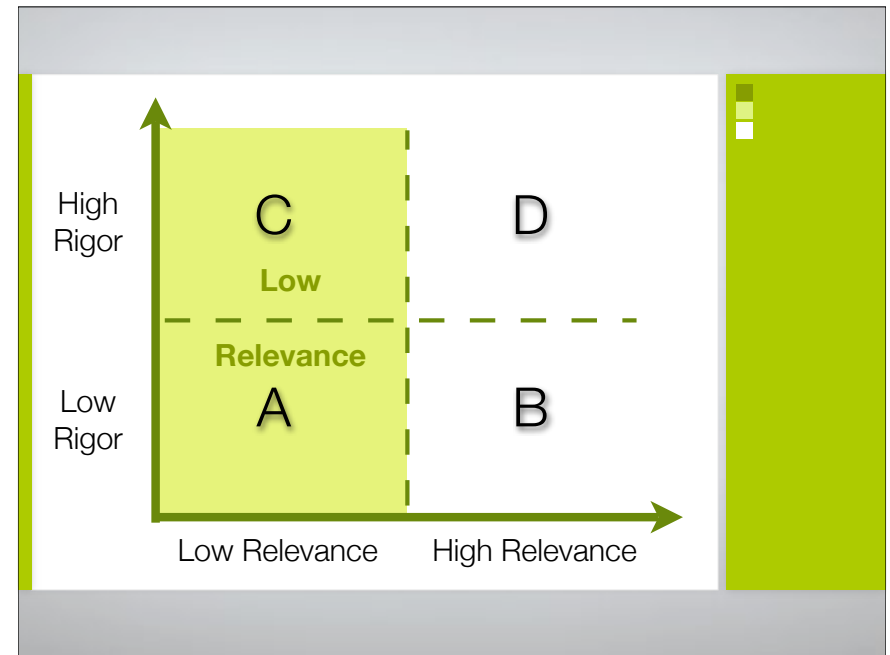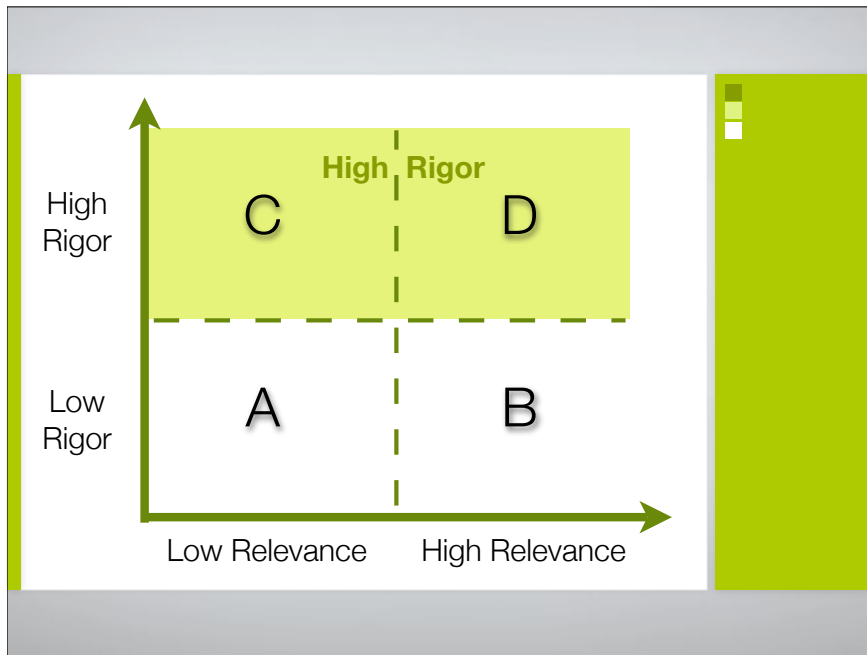Using skills and knowledge in routine school setting.
Work as directed by the teacher.
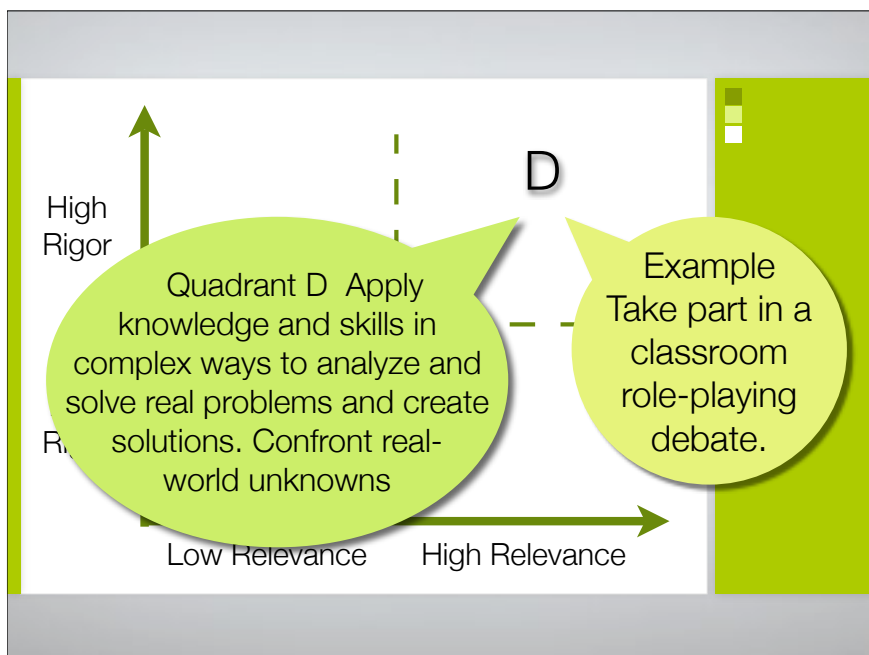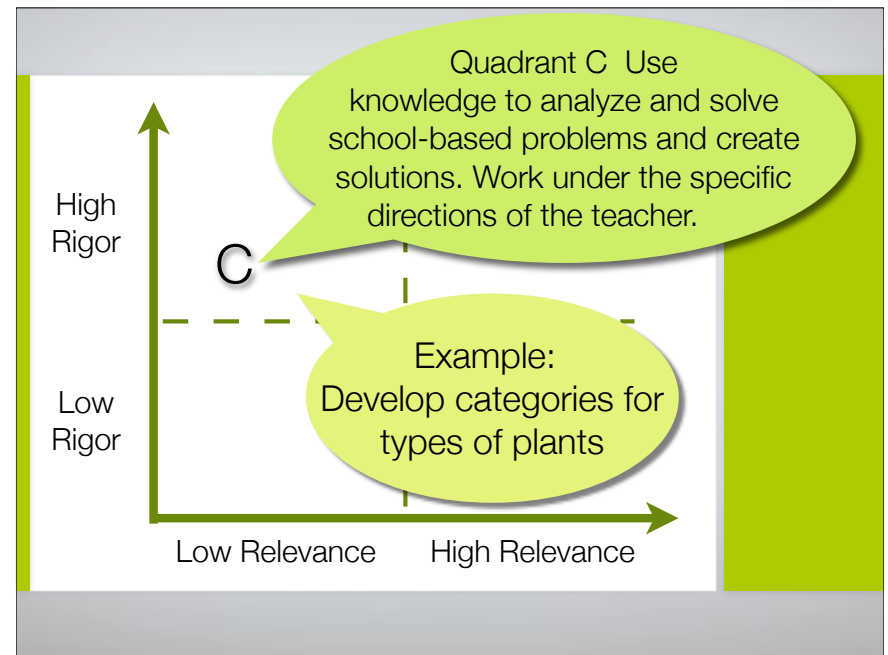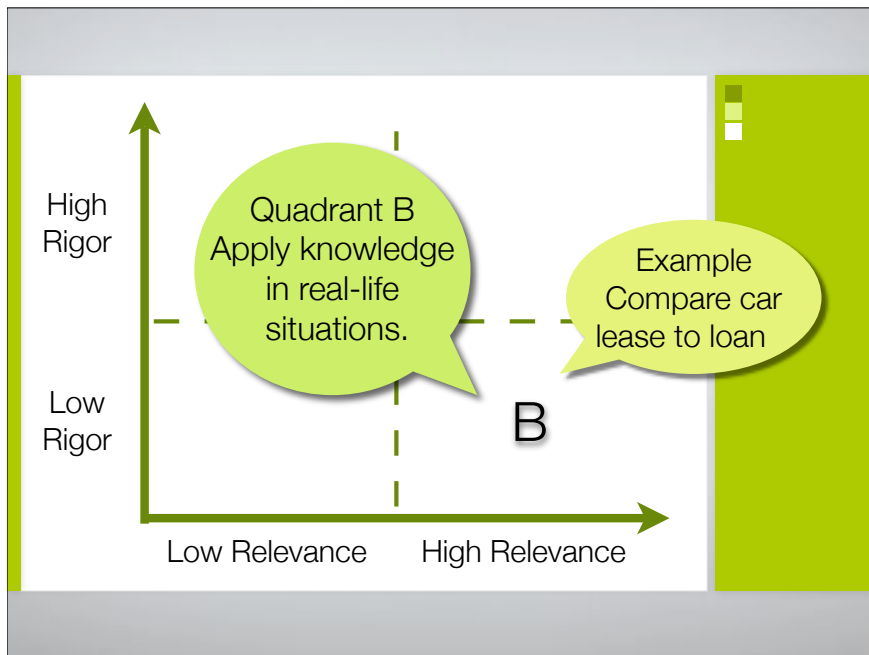
Using skills and knowledge for myself in the real world.
Figuring out my own approaches.

Rigor and Relevance Framework

High Rigor

C   D

Low Rigor

A   B

Low Relevance   High Relevance

High Rigor

C   D

Low Rigor

A   B

Low Rigor

Low Relevance   High Relevance

Slide 1

Higher and lower-order reflection by students

- **Creating**
- **Evaluating**
- **Analyzing**
- **Applying**
- **Understanding**
- **Remembering**

I can describe patterns, create my own connections, and assess my progress

I can tell you what I did, but don't expect me to think about it

Slide 2

Reflective Questions for Students

- **What** am I learning today?
- **Why** am I learning it?
- **How can I use** this knowledge and these skills **to make a difference** in my life?
- **How can I work** with teachers and other students **to improve my learning**?
- **How am I progressing** as a learner?
- **How can I communicate** what I'm learning with others?

Slide 3

Students are motivated by *Reflection*

They monitor and assess their own progress as life-long learners.

Slide 4

We'll focus on three strategies

- **Defining**: negotiating meaning
- **Summarizing**: synthesis and judgment
- **Comparing**: assessing similarities and differences

Slide 1

for more: www.edteck.com/read

Robert Marzano:
What Works in Schools

"35 years of research concretely identifies the factors that are the primary determinants of student achievement."

Robert J. Marzano, *What Works in Schools: Translating Research into Action*, 2003
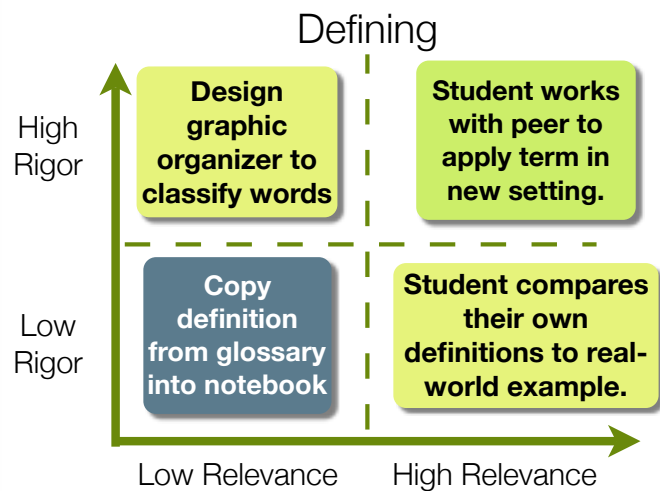
Slide 2

Defining **negotiating** meaning.

Slide 3

Defining

High Rigor

Design graphic organizer to classify words

Student works with peer to apply term in new setting.

Low Rigor

Copy definition from glossary into notebook

Student compares their own definitions to real-world example.

Low Relevance   High Relevance

Slide 4

Elements for teaching defining

- Before the dictionary comes out... connect students with their prior knowledge
- After the term has been defined ... give students chances to more deeply process the term

Pre-dictionary:
Let students work together to compare preliminary definitions.

- Students develop their own definition
- Compare to peer definitions
- Similarities
- Differences
- Use visual, verbal and text-based approaches

List, Group, Label

- Give students term
- They individually brainstorm related ideas
- They pair and share
- They put post-its into groups and label
- Turn into a poster

Personal Vocabulary Notebook
Prior knowledge plus processing

1. Term:
2. Student Definition:
3. Dictionary Definition:
4. Student comparison of 2 and 3:

Students use prior knowledge to generate a preliminary definition. Then use their definition to explore the dictionary definition.

Personal Vocabulary Notebook
Prior knowledge and processing

1. Term: Segregation
2. Student Definition: A time when African-Americans used to have separate schools
3. Dictionary Definition: The policy or practice of forcing racial groups to live apart from each other
4. Student comparison of 2 and 3: I thought of segregation more as a time period, but the dictionary calls it a practice or policy

Slide 1:

Students can measure their own progress.
Self-evaluation is **rigorous** and **student-centered**

Level	Rubric
4	I understand even more about the term than what I was taught. I know multiple meanings.
3	I understand the term and I'm not confused about any part of what it means.
2	I'm a little uncertain about what the term means, but I have a general idea.
1	I really don't understand what the term means.

Building Academic Vocabulary   Bob Marzano

Slide 2:

Personal Vocabulary Notebook
Prior knowledge and processing

My understanding of this term is at rubric level 4 | (3) | 2 | 1

1. Term: Segregation

2. Student Definition: A time when African-Americans used to have separate schools

3. Dictionary Definition: The policy or practice of forcing racial groups to live apart from each other

4. Student comparison of 2 and 3:
I thought of segregation more as a time period, but the dictionary calls it a practice or policy

Slide 3:

Student Vocabulary Progress
Student Name _____   Unit _____

Rubric 4	X	X	X		
Rubric 3	X	X	X	(X)	
Rubric 2	X	X			
Rubric 1	X	X			

Building Academic Vocabulary - Bob Marzano

Slide 4:

word of the day

Use a common academic vocabulary list

Find vocabulary lists by discipline and level at:
Building Academic Vocabulary
Bob Marzano

Sun	Mon	Tue	Wed	Thu	
					1
3	4 endure *verb*	5 endurance *noun*	6 durable *adj*	7 duration *noun*	8 Super
10	11 Columbus Day	12 pendant *noun*	13 pendulum *noun*	14 pending *adj*	15
17	18 nature *noun*	19 natal *adj*	20 native *adj*	21 nativity *noun*	22
24	25 magnificent *adj*	26 magnify *verb*	27 magnanimous *adj*	28 magnitude *noun*	29
31					

Slide 1

Elements for teaching defining

- Before the dictionary comes out... connect students with their prior knowledge

- After the term has been defined ... give students chances to more deeply process the term

Slide 2

Defining:
a chance for reflective writing

- How is the word related to something else I learned in school?
- How is the word related to something else in my life?
- How is the word used in different situations?
- How has my understanding of the word grown?

Slide 3

Defining

High Rigor

Low Rigor

Negotiating and sharing meaning in a social context

Copy definition from glossary into notebook

Low Relevance   High Relevance

Slide 4
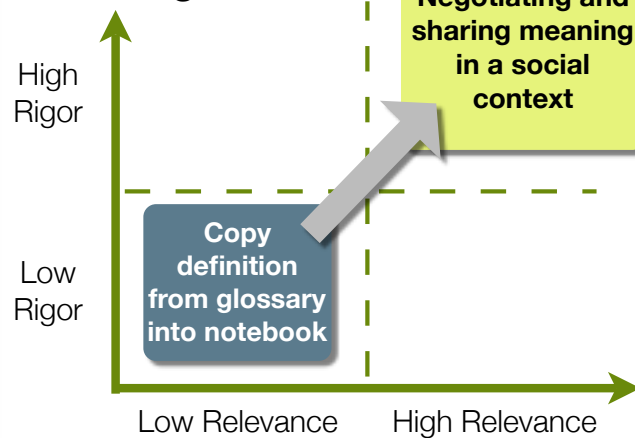
Summarizing

Evaluating what's important.
Sharing what you've learned.

Slide 1

Summarizing

High Rigor

Low Rigor

- Analyze the elements of an image
- Summarize an opponent's arguments in a debate
- I can guess what the teacher thinks is important
- Negotiate a collaborative summary with a peer

Low Relevance　　　High Relevance

Slide 2

Summarizing builds content knowledge

Research shows student use of summarizing skills results in a 34-percentile gain in student performance.

Classroom Instruction that Works, ASCD, 2001

Group 1: Teacher lectures on the essential characteristics of mammals

34% gain in content mastery

Group 2: Teacher lectures, then students do a summarizing exercise on the essential characteristics of mammals

Slide 3

Six essential summarizing skills

- **Identify details** – can you identify key symbols, words, visual elements?
- **Recognizing context** – where is this taking place, time period, who's involved?
- **Identify relationships** – who are these people, what is their relationship to one another?

Slide 4

Continued - Summarizing skills

- **Identify opinions** – is there a point of view expressed in the source information?
- **Make predictions** – based on the information, what will happen next?
- **Infer meaning** – is there meaning that can be extracted from what's between the lines?

Slide 1

Elements for teaching summarizing

- Allow students to make their own judgements about what's important (instead of just repeating the details the teacher highlights)
- Students need to be able to share what they've learned with an audience other than the teacher.

Slide 2

What do you see? What's important?

foot |foŏt|, noun (pl. feet |fēt|)

(Anat.) The terminal part of the leg of man or an animal; esp., the part below the ankle or wrist; that part of an animal upon which it rests when standing, or moving.

Slide 3

Summarizing and evaluating

- It's 1936 and you work for Life Magazine.
- Which photo would you use to illustrate an article on the plight of the migrant workers?

Slide 4

Dorothea Lange's "Migrant Mother" 1936

"I saw and approached the hungry and desperate mother, as if drawn by a magnet. I do not remember how I explained my presence or my camera to her, but I do remember she asked me no questions. ....

I did not ask her name or her history. She told me her age, that she was thirty-two. She said that they had been living on frozen vegetables from the surrounding fields, and birds that the children killed. She had just sold the tires from her car to buy food. There she sat in that lean- to tent with her children huddled around her, and seemed to know that my pictures might help her, and so she helped me."

Elements for teaching summarizing

- Allow students to make their own judgements about what's important (instead of just repeating the details the teacher highlights)
- Students need to be able to share what they've learned with an audience other than the teacher.

Explaining what you've learned is telling a story using a narrative structure.

- Student may need **explicit training** about **narrative structures**.
- Recognizing **how information is organized** helps to **analyze original** work and **summarize it** for their **audience.**

Narrative Frame	Description	Cue Words
Description	Describes a topic by listing characteristics, features, and examples	for example, characteristics are
Comparison	Explains how two or more things are alike and/or how they are different.	different; in contrast; alike; same as; on the other hand
Cause / effect	Lists one or more causes and the resulting effect or effects.	reasons why; if...then; as a result; therefore; because
Problem / Solution	States a problem and lists one or more solutions for the problem.	problem is; dilemma is; puzzle is solved; question... answer
Sequence	Lists items or events in numerical or chronological order.	first, second, third; next; then; finally

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Description: listing characteristics, features, and examples

Features

Topic
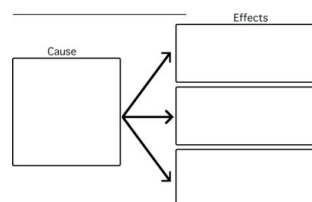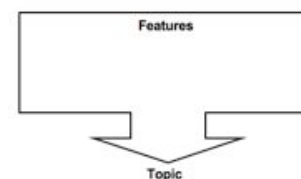
Effects

Cause

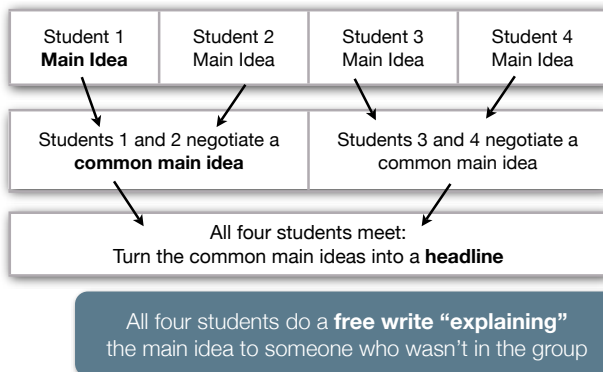**Cause / Effect:** one or more causes and the resulting effect or effects

Slide 1

Model active viewing, listening, and reading as a foundation for summarizing

- Getting the **visual message** right
  *"So what the **artist is saying** is…"*
- Getting the **spoken message** right
  *"So what **you're saying** is…"*
- Getting the **written message** right
  *"So what the **author is saying** is …"*

Slide 2

"Telling Board"
Let student sequence a story in pictures, text, symbols
Roger Essley - Author, Illustrator

Slide 3

Use a "4-2-1- free write" to collaborate and reflect on a main idea

Student 1 **Main Idea**	Student 2 Main Idea	Student 3 Main Idea	Student 4 Main Idea

Students 1 and 2 negotiate a **common main idea**	Students 3 and 4 negotiate a common main idea

All four students meet:
Turn the common main ideas into a **headline**

All four students do a **free write "explaining"** the main idea to someone who wasn't in the group

Reading for Academic Success ~ Strong and Silver, 2002

Slide 4

Summarizing

Evaluating what you think is important. Creating an appropriate summary for an authentic audience

High Rigor

Low Rigor

I can guess what the teacher thinks is important

Low Relevance   High Relevance

Slide 1

Summarizing:
a chance for reflective writing

- What did I think was important?
- How did I share that with my audience?
  (Did my summary match audience / purpose?)
- Is the summary accurate?
- Did I use my own words and style?
- What did I learn from the summarizing?

Slide 2

Comparing Classifying

Evaluating similarities and differences.
Sharing what you learned.

Slide 3

Comparing builds content knowledge

Research shows student use of comparing skills results in a 45-percentile gain in student performance.
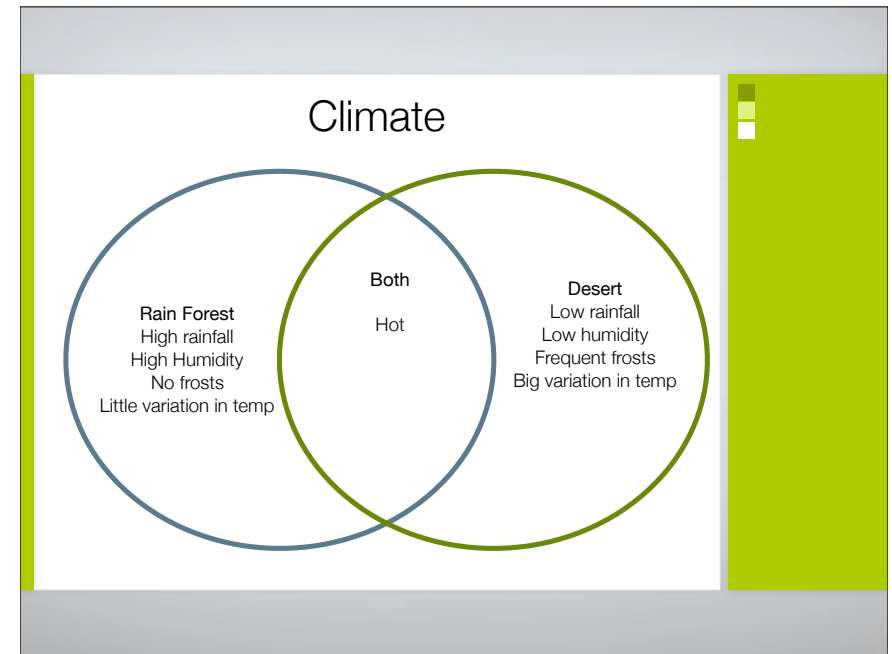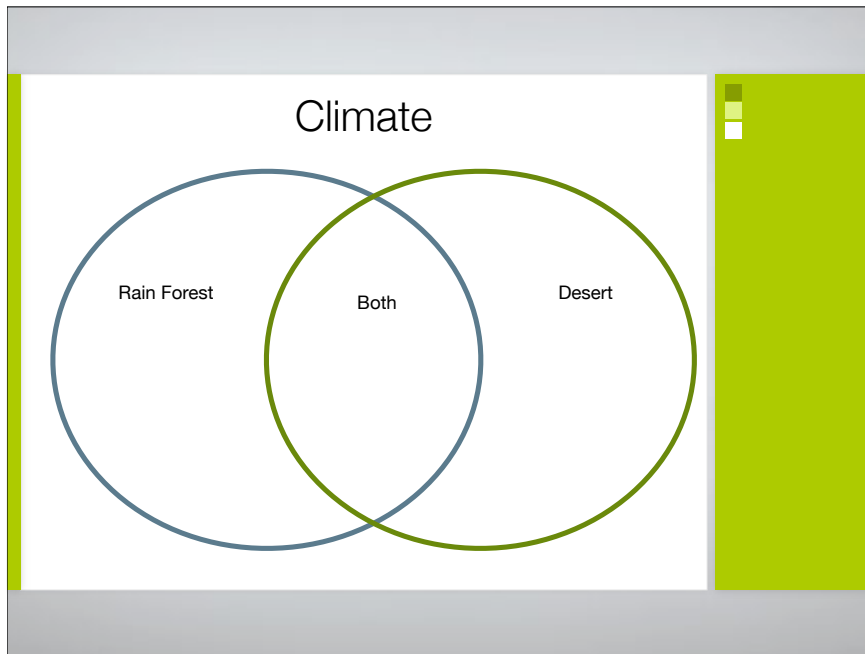
Classroom Instruction that Works, ASCD, 2001

Group 1:
Teacher lectures on the essential characteristics of mammals

45% gain in content mastery

Group 2:
Teacher lectures, then students compare the essential characteristics of mammals to birds

Slide 4

"Compare the animals and climate of the rain forest and desert."

Rain Forest	Desert
Ave rainfall 450 centimeters /year	Ave rainfall 15 centimeters /year
High Humidity	Low humidity
No frosts	Frequent frosts
Little variation in temp-average 26°C	Big variation in temp
Ave low 17°C	Low 13°C
Spider Monkey	High 48°C
Pit Viper	Bats
Three-toed Sloth	Iguana
Jaguar	Ants
Giant River Otter	Tarantula
Bats	Coyote
Iguana	Desert Tortoise
Ants	Rattlesnake

Slide 1

Climate

Rain Forest

Both

Desert

Slide 2

Climate

Rain Forest
High rainfall
High Humidity
No frosts
Little variation in temp

Both
Hot

Desert
Low rainfall
Low humidity
Frequent frosts
Big variation in temp

Slide 3

Do you give students chances to develop **their own** comparative models?

- They could select items to compare from a teacher-produced list.
- They could independently decide what to compare.
- Can include some combination of selecting both the items and / or characteristics.

How is the comparison useful?
What does it enable us to do or see?

Slide 4

Students can do comparisons in every class.

What's more important in a sport … strength or agility?

Move students from comparing to classifying

- We typically ask students to take someone else's classification system and apply it.
- We rarely ask students to generate a classification system of their own.

List, group, label strategy
Students create classification systems with Post-its.

Rigor and relevance in practice: Student-designed classifying exercise

- What do I want to classify?
- What things are alike that I can put into a group?
- Does everything fit into a group now?
- Would it be better to split up any of the groups or put any groups together?

Elements for teaching comparing and classifying

- We must ask **students to develop the comparison**, not just learn and repeat the model that we present to them.
- Student must share what they learned from the comparison.

Comparing and Classifying: a chance for reflective writing

- What did I compare?
- How did I structure the comparison?
- How was the comparison useful to me?
- What did I learn from it?
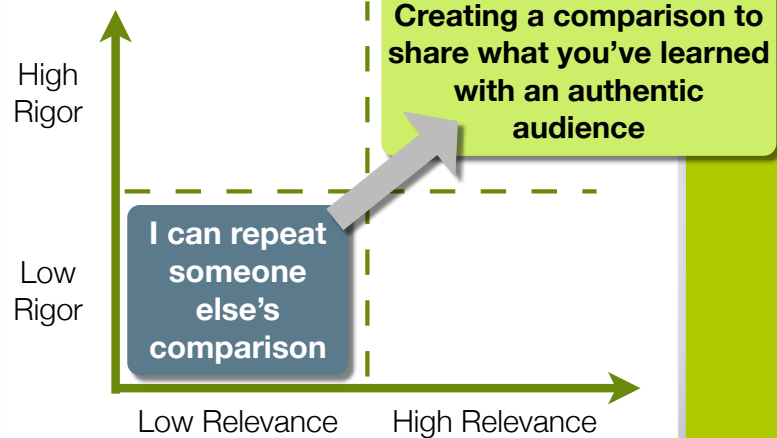- How did others design their comparisons?

Slide 1: 6th graders write ABC book
- Students study the organs of the body
- Develop a comparisons
- Create an ABC book

Slide 2: What process did you use to complete the project?
We **organized** and decided who was going to do what and how. Then we read everything over **to see if everything made sense to our audience**

Slide 3: Comparing
High Rigor / Low Rigor
Low Relevance / High Relevance
Analyzing components. Evaluating schema. Creating a comparison to share what you've learned with an authentic audience
I can repeat someone else's comparison

Slide 4: **When do we stop modeling for students** and let them take responsibility for their learning?

Slide 1

Redefining the roles of teacher and student

High Rigor

Low Rigor

Low Relevance   High Relevance

- Students think in complex ways: analyze, compare, create, and evaluate.
- Students think, create, evaluate in more complex and unscripted settings. They take more responsibility for monitoring their learning.
- Teachers work to create and assess learning activities. The student may be a passive learner.
- Students work applying knowledge and skills in real-world tasks.

Slide 2

Move teacher from ~~dispensing information~~ *to instructional designer*

- **Rigor** - analyzing, evaluating, creating
- **Relevance** - students select their strategy
- **Reflection** - student evaluates their progress

Product that asks students to communicate their thinking

Slide 3

Motivating Life-long Learners

#1 factor for improving student motivation is choice.

Not whether the student does the assignment, but how they engage in the work.

~Doug Reeves

Slide 4

Traditional Writing is *Assigned*	Writing Assigned with *Choice*
Students are asked to write only on the **teacher's topics**.	**Students** can **develop topics** that matter to them.
Student **writes for the teacher**.	**Audience and purpose** for writing is identified.
Teacher grades their writing.	**Students** are asked to **reflect on their growth**.

New digital technologies have put **students in charge of** the **information** they access, store, analyze and share.

Digital age gives students access to information and higher order thinking tools.

Bloom's Higher-Order Skills

- **Creating** - generating new ideas
- **Evaluating** - justifying a decision or choice
- **Analyzing** - breaking into component parts

What skills will the 21st century workplace require?

- *Literacy*
- *Numeracy*
- *Self-discipline*

Creativity and adaptability they must be **flexible independent learners**

Our goal – **students** who will be able to **function** in an **unpredictable world.**

Learn to research, think, problem-solve and write like a

- scientist, engineer, coach, artist, historian, writer, mathematician, musician ….