Element 17:
Examining Similarities and Differences

The next several issues of CI News and Notes will explore practical ways to use the Marzano elements in ways that can positively impact our students’ learning. We will feature elements 17, 18, 19, and 20 over the coming months. We hope that you can use these resources in your classroom with your students.
This issue focuses on Element 17: Examining Similarities and Differences

How familiar are you with these activities and this teacher & student evidence?

These are the kinds of learning activities that help us use the strategy of examining similarities and differences with our students. Do you know the essential meaning of these?

Comparison Activities: a cognitive process to identify similarities and differences between or among things

Classifying Activities: a way to put things that are alike into categories based on their characteristics (attributes, properties, traits)

Analogy Activities: a characteristic (attribute) shared by two objects (topics) that seem to be quite different

Metaphor Activities: a comparison of two similar objects (things, ideas, people)

Marzano Research Library

Check this link for 6 graphic organizers to help students examine similarities and differences using metaphors, analogies, classifying, and comparing.
Some COOL TOOLS to help with implementing Element 17: Examining Similarities and Differences

Get free online, interactive Venn Diagrams (like this one) at Read, Write, Think. And, some great ideas for lessons, too! Great article about teaching science using analogies. This article at TeacherVision gives some examples of how to use analogies and metaphors for learning in all disciplines.

Use these sentence stems with the chart to give students practice on making comparisons:
1. ___ and ___ are similar because they both ____.
2. ___ and ___ different because ___ is ___ and ___ is ___.

### 15 Kinds of Relationships that Analogies May Express

The first word below is a type of analogy relationship.

**NOTE:** The single : means “is to” and the :: means “as”

1. antonyms – offense : defense :: batter : pitcher
2. synonyms – promise : vow :: treaty : agreement
3. part/whole – fulcrum : lever :: hinge : door
4. whole/part – city : neighborhood :: neighborhood : street
5. category/example – mammal : monkey :: fish : carp
6. example/category – Sleeping Beauty : fairy tale :: ice cream : dessert
7. agent/purpose – sunscreen : sunburn :: vaccine : flu
8. class/membership – metamorphic : marble :: igneous : basalt :: sedimentary : limestone
9. effect/cause – flood : rain :: infection : bacteria
10. cause/effect – rain : puddle :: nuclear reaction : radiation
11. increasing intensity – unhappiness : misery :: happiness : elation
12. decreasing intensity – hot : warm :: towering : tall
13. action/thing acted upon – read : book :: chew : gum
14. object or place/its user – chalk : teacher :: stone : mason
15. quantitative/size – year : month :: month : day

Here are some important things to remember when you think about analogies:

- Parts of Speech–If the words in the first pair express a “noun : adjective,” or “verb : noun,” or adjective : adjective” relationship (for instance), the second pair should show the same relationship between parts of speech.
- Word Order–If the first pair expresses a “tool user : tool” relationship (for instance), the second pair must express the same relationship in the same order.
- Exactness–Sometimes two or more of the given choices would make fairly good sense in the blank. When this happens, you should choose the word or pair of words, which most exactly suits the relationship you are expressing.

How can the use of analogies in content areas help you know students truly understand a concept?
Comparing Activity for Teachers

3 Approaches to Scaffolding to Help Students Understand

The “Goldilocks” Level of Scaffolding and Support for Students

In this Kappan article, Rachel Dale (an elementary teacher in Wake County, North Carolina) and Jimmy Scherrer (formerly of North Carolina State University) describe how the following math problem was taught in three different classrooms:

Tyler and Samantha ordered same-size pizzas. Tyler’s was cut into eighths, Samantha’s into tenths. Tyler ate four pieces of his pizza. How many pieces would Samantha have to eat to consume the same fraction of her pizza? Explain your work with words, pictures, or numbers.

Classroom #1 – The teacher reads the problem aloud, asks students to solve it with a partner, and circulates. In one group, a student quickly solves the problem by seeing that 5/10 is the same as 4/8, but his partner doesn’t get it. The teacher decides to let them wrestle with it on their own. Another pair is arguing about whether the pizzas are pepperoni or cheese. The teacher is happy they’re engaged and again, doesn’t intervene. She notices that a number of students are drawing circles for the pizzas and having trouble dividing them up appropriately. She decides to let them struggle with this interesting challenge. At the end of the class, she assigns 20 equivalent fractions problems for homework.

Classroom #2 – The teacher reads the problem to students and walks around the room observing groups working. One is drawing circles representing the pizzas but has divided both into eighths. The teacher draws two circles and shows how to divide them up correctly. The students thank him. Another group is stuck trying to figure out 4/8 = ?/10. The teacher suggests that they draw two circles to represent the pizzas, divide one into eight pieces, the other into ten, shade in four of the eight pieces, then look to see the equivalent proportion in the other. Assuming that the students are no longer confused, the teacher moves on. Another group is making the mistake of dividing both pizzas into eighths, and the teacher decides to call the class to order and demonstrates the correct procedure on the board. He adds that they can use number lines instead of drawings. Unsure about the level of understanding, he doesn’t assign math homework.

Classroom #3 – The teacher displays the problem, asks a student to read it aloud, and challenges students to solve it in several different ways. She circulates and notices one group of students who quickly realize that 4/8 is the same as 5/10. “How might you be able to convince me of that without using numbers?” she asks. The students ponder this and begin to draw the pizzas to illustrate the fractions. The teacher overhears another group talking about their favorite kinds of pizza and immediately redirects them to the task. A third group is having trouble partitioning their circles; they tell the teacher they’re trying to compare the circles. “Say more about that,” she says. “If we can get this circle into 10 equal pieces, we could see how many of these pieces would equal the four pieces that we shaded in that circle,” says a student. “I see,” says the teacher. “If you are having a difficult time dividing the circle into equal pieces, perhaps you can apply your method using a different shape.” As she walks away, the group is discussing using squares or rectangles. The teacher lets students work for five more minutes and then convenes a whole-class discussion.

These teachers’ ways of handling the same task demonstrate three possible points on the “Goldilocks” scale:

- Too little scaffolding, resulting in unsystematic exploration;
- Too much scaffolding, constraining opportunities to think through and persevere;
- Just the right amount of scaffolding, resulting in productive struggle.

The third teacher’s interventions were appropriate, say Dale and Scherrer. The teacher didn’t hesitate to get involved to help students who were off task or stuck, but she didn’t reduce cognitive demands and asked questions that pushed students to think through possible solutions on their own.


Looking for ELL Corner? Check page 5!
Many times, we ask ELL students who are at varying levels of English proficiency to do certain activities that they are not able to access due to their lack of English language understanding. The statements below represent what ELL students CAN DO at each level. It is essential that we understand the needs of these students and allow them to demonstrate understanding where and how they CAN. If we ask an ELL student at a Level 1 proficiency to do learning tasks at Level 4, how can we expect that student to be successful?

### Figure 5M: CAN DO Descriptors for the Levels of English Language Proficiency, PreK-12

For the given level of English language proficiency, with support, English language learners can:

<table>
<thead>
<tr>
<th>Level 1 Entering</th>
<th>Level 2 Beginning</th>
<th>Level 3 Developing</th>
<th>Level 4 Expanding</th>
<th>Level 5 Bridging</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LISTENING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Point to stated pictures, words, phrases</td>
<td>• Sort pictures, objects according to oral instructions</td>
<td>• Locate, select, order information from oral descriptions</td>
<td>• Compare/contrast functions, relationships from oral information</td>
<td>• Draw conclusions from oral information</td>
</tr>
<tr>
<td>• Follow one-step oral directions</td>
<td>• Follow two-step oral directions</td>
<td>• Follow multi-step oral directions</td>
<td>• Analyze and apply oral information</td>
<td>• Construct models based on oral discourse</td>
</tr>
<tr>
<td>• Match oral statements to objects, figures or illustrations</td>
<td>• Match information from oral descriptions to objects, illustrations</td>
<td>• Categorize or sequence oral information using pictures, objects</td>
<td>• Identify cause and effect from oral discourse</td>
<td>• Make connections from oral discourse</td>
</tr>
<tr>
<td><strong>SPEAKING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Name objects, people, pictures</td>
<td>• Ask WH- questions</td>
<td>• Formulate hypotheses, make predictions</td>
<td>• Discuss stories, issues, concepts</td>
<td>• Engage in debates</td>
</tr>
<tr>
<td>• Answer WH- (who, what, when, where, which) questions</td>
<td>• Describe pictures, events, objects, people</td>
<td>• Give speeches, oral reports</td>
<td>• Explain phenomena, give examples and justify responses</td>
<td>• Express and defend points of view</td>
</tr>
<tr>
<td><strong>READING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Match icons and symbols to words, phrases or environmental print</td>
<td>• Locate and classify information</td>
<td>• Sequence pictures, events, processes</td>
<td>• Interpret information or data</td>
<td>• Conduct research to glean information from multiple sources</td>
</tr>
<tr>
<td>• Identify concepts about print and text features</td>
<td>• Identify facts and explicit messages</td>
<td>• Identify main ideas</td>
<td>• Find details that support main ideas</td>
<td>• Draw conclusions from explicit and implicit text</td>
</tr>
<tr>
<td><strong>WRITING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Label objects, pictures, diagrams</td>
<td>• Make lists</td>
<td>• Produce bare-bones expository or narrative texts</td>
<td>• Summarize information from graphics or notes</td>
<td>• Apply information to new contexts</td>
</tr>
<tr>
<td>• Draw in response to a prompt</td>
<td>• Produce drawings, phrases, short sentences, notes</td>
<td>• Compare/contrast information</td>
<td>• Edit and revise writing</td>
<td>• React to multiple genres and discourses</td>
</tr>
<tr>
<td>• Produce icons, symbols, words, phrases to convey messages</td>
<td>• Give information requested from oral or written directions</td>
<td>• Describe events, people, processes, procedures</td>
<td>• Create original ideas or detailed responses</td>
<td>• Author multiple forms/genres of writing</td>
</tr>
</tbody>
</table>

*Variability of students’ cognitive development due to age, grade level spans, their diversity of educational experiences and diagnosed learning disabilities (if applicable), are to be considered in using this information.*
Thanks to our new teachers for some valuable sharing, collaborating, and celebrating this past week. Next meetings are:

- ES New Teachers -- 1.26.16
- MS New Teachers -- 1.27.16
- ES New Teachers -- 1.28.16

Congrats to our winner of last month’s C/I News & Notes contest—

Jen Menear, grade 5 teacher at Eisenhower. Jen received a goody bag and a gas gift card!

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TIPS for Parent Communication

- Always return calls or emails within 24 hours. This will save negative feelings. Wait to call for at least an hour if you are feeling really stressed, emotional, or angry. Give the emotions time to subside so you can think and speak with a clear head.
- Prepare for your return communication with data checks, information to share, and thoughtful consideration.
- Always lead with what is best for the student!
- Positive phone calls—try it!

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Have you signed up for LEARN Academy yet?? Last day to register is November 5, 2015

Lead, Evolve, Advance, Renew, Now!

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Happy Fall from this colorful Hipster!

TRICK OR TREAT