

Appendix I: Illustrative School and Classroom Scenarios

Theme 1: Clear Learning Goals

Elementary – 3rd grade English language arts.

Mrs. Jones, a third grade teacher, uses the clear learning goals “window frame” to better target her lesson design. A language arts curriculum standard states, *The student will be able to sequence events from a story.* She used a window frame graphic to clarify the learning goal of her next lesson.

	Performance	Content
General	Apply	Language Arts Sequence a story
Specific	Identify errors Reorder	Chain of events from a shared reading of a short book

After completing the chart, Mrs. Jones wrote her learning goal into two student learning targets.

- *I can identify errors in a chain of events from a story.*
- *I can reorder the chain of events of a story to place them in the correct order.*

Mrs. Jones could use these student learning targets for other lessons to practice the same skills.

Middle – 7th grade history.

When Tom Rutherton analyzed the results of a 7th grade geography test he found that 22 out of 25 students answered the following question incorrectly.

*Explain the similarities and differences between a **delta** and an **estuary**. You can use a Venn diagram for your answer.*

Most of the answers had definitions of a delta and an estuary, but did not compare the two or the answer was blank. He questioned his class about the difficulty they had answering this question. He discovered that the students had learned the definitions of the required landforms (knowledge) because that is what he taught. He did not teach his class how to compare and contrast (understand/apply) landforms.

He then wrote a clear learning goal that better matched the level of performance to the specific task he wanted his students to perform. After re-teaching the skill, he gave the students a “redo” question.

*Explain the similarities and differences between a **lagoon** and a sound. You can use a Venn diagram for your answer.*

This time 21 students answered correctly.

High school – American history.

During their professional team time, the high school American history teachers often worked together to construct clear learning goals/targets for their history classes. They began by identifying more specific content topics from the general learning statements. Then they matched specific content learning with specific levels of thinking and doing. Below is an example their work in progress.

Standard: Understands (*general level of thinking and doing*) how slavery influenced economic and social elements of Southern society in the early 19th Century (*general content*).

Lesson Topics: (*specific content*) Economic and social development of Southern society between 1830 and 1860.

1. The South remained an agricultural society with a scattered population and few urban centers or factories (*specific content*).
 - Compare (*specific level of thinking*) the Southern economy to the growing industrial economy of the North.
 - Describe (*specific level of thinking*) how cotton plantations impacted the Southern economy.
2. Southern agricultural society depended on slavery. (*specific content*)
 - Summarize (*specific level of thinking*) the impact of slavery on Southern values, customs, and laws.

Theme 2: Congruency

Elementary – 3rd grade mathematics.

Students in a third grade classroom were learning how to divide objects into fractions. They had learned that the numerator is the number of parts selected from the whole and that the denominator is the total number of parts that divide the whole. Following a few whole class activities, the teacher passed out a worksheet for the students to complete individually. At the top of the paper were ten questions that asked the students to match fractions to a picture that illustrated the fractions. In the middle, the instructions were to draw a picture to illustrate five given fractions. There were ten more questions at the bottom. The directions for these last ten instructed the student to match pictures of different fractions that illustrated equal parts. The teacher told the students to complete only the top and middle sections. One student asked, “Why not do the bottom questions?” The teacher replied, “You will answer the bottom questions tomorrow, after we learn more about what they are asking you to do.”

Middle – 6th grade science.

In a sixth grade science class the learning objective an intern teacher wrote in her lesson plan was: *SWBAT illustrate the relative scale of the layers of the atmosphere and their locations from earth.* The two learning activities she wrote to go along with this objective were:

Activity 1: The students will cut out the names of the five layers of the earth's atmosphere and glue them in the correct locations on the given picture of the atmospheric layers.

Activity 2: The students will place pictures of objects in the layers of atmosphere where they would commonly be found.

When reviewing the lesson plan, the cooperating teacher commented that the first activity was congruent to the lesson objective, yet the second activity was only correlated, and instructed her to think of another more congruent activity.

High school – civics.

Mr. Johnson, a high school civics teacher, had the following learning target on the classroom whiteboard: *I can explain the difference between a criminal law and civil law court case.* For the learning activity, he divided the class into pairs and gave each two news articles, marked #1 and #2. The student pairs also received a chart to complete. He instructed the students to read the articles and fill in the chart. He told the class the first article was about a civil case and the second was about a criminal case.

1.	2. Article Civil Case	3. Article 2 Criminal Case
4. Who are the parties involved? Circle the party that brought the case to court.	5.	6.
7. Describe the issue that the court must decide. (What is the nature of the case?)	8.	9.
10. What is the penalty or remedy being sought?	11.	12.
13. What must the defendant(s) prove to win the case? (Burden of Proof)	14.	15.

A class discussion about the chart and correct answers followed the work time. Mr. Johnson felt very good about the students' level of understanding related to the differences between criminal and civil court cases. He then gave the following homework assignment:

*Imagine that you are a law professor. One student submitted this summary about a **criminal case**. Obviously the student does not understand the difference between civil and criminal court cases. Use your knowledge about **criminal court cases** and correct this student's summary.*

The next day the class reviewed the homework. Mr. Johnson was surprised at the difficulty his students had with the assignment. Many students could not identify what

information to correct. So he decided to redo the activity together. Student understanding appeared to increase as they discussed the assignment together. Mr. Johnson realized the mistake he made with the homework assignment. The day before he had only introduced the difference between criminal and civil court cases at the *knowledge/understanding* learning level. The in-class activity was congruent to this level. Yet the homework assignment he gave asked the student to *analyze and apply* their learning. They needed more learning activities to build from *understanding*, to being able to *apply and analyze* the concepts. With this clarity, he decided to have the students read more court cases from online sources and practice identifying (*understand and apply*) whether the case was civil or criminal.

Theme 3: Task Analysis

Elementary – kindergarten language arts.

Portia Green, a 2nd year kindergarten teacher was frustrated by not knowing how to teach students who recognized letter names, but could not identify the letter sounds. Simply presenting the letter and repeating the sound in different activities was not working for several students. She decided to research the “task analysis” for sound-letter recognition.

Searching online she found different resources which emphasized that phoneme awareness was a critical early reading skill, but that this skill involved more than just identifying letters and their sounds. From her readings she concluded that hearing word and letter sounds, and “playing” with the sounds (such as in alliterations and rhyme) were also early phoneme awareness skills. Using this new understanding, she started a task analysis for phoneme awareness.

- Recognize individual sounds in words - *What sound do you hear at the beginning of sit? What sound do you hear at the end of water?*

- Recognize the same sound in different words - *Which words have the same sound at the start of the word: table, snail, top?*
- Recognize the odd sound in a series of words - *Which word has a different sound at the end of the word: bottom, opossum, jump, mom?*
- Hear separately spoken phonemes and bend them into a word - *What word do the sounds d/o/g/ make?*
- Break a word down to its separate phonemes - *What sounds do you hear in the word mat?*
- Identify what remains of a word if a phoneme is deleted - *What sounds are left if you take the /p/ sound away from the word pat?*
- Make a new word by adding a phoneme - *What word do you make if you add the /b/ sound to the beginning of /at/?*
- Substitute one phoneme for another to create a word - *What word do you make if you change the /t/ sound in cat to the /p/ sound?*

This list helped Portia design lessons to teach students to “hear” sounds. She discovered that most of her students who could not identify individual letter sounds, had difficulty isolating phoneme sounds they heard. Now she knew how to write intervention lessons for these students.

Middle school – math.

Mr. Goulds knew that a task analysis helped him to plan and sequence his math lessons. One day he decided that the idea of a task analysis might help his students solve the multi-step algebraic problems that seem to frustrate them. He began the class by having small groups of students write the steps to make a peanut butter and jelly sandwich. He randomly chose one set of directions to follow. When he tried to spread the peanut butter on top of the jelly, as the

directions stated, one student commented that his groups' instructions explain that it is easier to spread the jelly on top of the peanut butter. Mr. Goulds used that point to introduce the term task analysis. He then had the same student groups solve a multi-step algebraic problem and write a task analysis to solve the problem. Using ideas from all the groups' work, the class developed a task analysis to solve multi-step algebraic problems. Mr. Gould made a poster of the work and displayed it on the classroom wall. It became a valuable tool to use. Students often referred to it, and Mr. Gould could use it to ask a student who was having difficulty, "Did you do step...?"

High school – music.

Many band students in Mrs. Perterlonia's class did not do a good job at cleaning and maintaining the condition of their instruments. At the next full band rehearsal session she asked all the similar band instrument groups to meet together. Then she instructed the more experienced students to demonstrate to the others how they cleaned and maintained their instruments. Following the demonstrations, the less experienced students had to clean their instruments while the more experienced students watched. She instructed the experienced students to provide corrections and useful tips as they watched.

The next day while the more advanced students practiced a musical piece, Mrs. Perterlonia had the less experienced students again group together by instruments. They were instructed to write a task analysis for cleaning and maintaining their instruments. This process worked so well she shared the idea with the middle school band instructor.

Theme 4: Diagnosis

Elementary – 2nd grade science.

In the computer lab, Mr. Franks explained to his 2nd grade class that they were starting a science unit on the mouth and teeth. He then directed his students to go to a web site that had a

short video of the parts of a tooth. At the end of the video was a quiz. The students were instructed to take the quiz and record the information they knew and did not know. Mr. Franks explained that when they returned to the classroom, the students would use the results from their quizzes to identify the critical concepts about teeth they needed to learn. Mr. Franks often used similar activities to help his students take ownership of their learning and increase motivation for learning.

Middle school - health.

When the students walked into their middle school health class, they were given a number from 1-6. They formed groups according to the numbers. Each group received a statement to discuss and share what they thought about the statement.

- *Don't swallow gum because it takes seven years for it to digest.*
- *Too much sugar causes hyperactivity.*
- *Cracking you knuckles causes arthritis.*
- *You can catch a cold from not wearing a coat and hat in cold/wet weather.*
- *Wait 30 minutes after eating before swimming.*
- *Chocolate and fried foods cause acne.*

The teacher learned from this opening activity that her three health classes had different levels of understanding about these medical myths. This allowed the teacher to choose how to start the new unit on medical propaganda. The objective of the unit was to teach students to gather and compare data from different sources to help make informed decisions about nutrition and medicine. One class had a large percentage of “myth believers.” With this group, she decided to start by instructing the students to research the original six myths. Her other two classes demonstrated more skepticism of the statements. With these classes, she decided to share

the facts briefly about the original six myths, and then have these students move on to research other medical myths.

The next day the classes shared their discoveries. She was pleased with her choice, because the class with the “myth believers” searched several sources before they were ready to concede their original beliefs. This same process was unnecessary with the other two classes. Those classes enjoyed discovering the truth about other myths. Now all her students had more open minded and “skeptical” views of broad nutrition and health related statements/beliefs that can affect sound decision making, and she could continue on with the lessons in the unit.

High school – algebra.

Sara Biggles has discovered some common errors and misconceptions that students have developed during lower level math classes that cause problems in algebraic thinking. At the start of her third year, she decided to give a pre-test to identify students’ misconceptions and then begin the course by assigning students to specific “work stations” to clarify and correct their misconceptions. Students who do not need to complete the stations, or needed to complete only a few, were assigned as station managers, as tutors for classmates who needed help.

Theme 5: Overt Response

Elementary – 1st grade language arts.

First grade teacher, Sonya Reynolds, typically had students answer individually or in a choral fashion when learning about rhyming words. After learning more about the importance of obtaining overt responses from all her students, she made index cards that had various illustrations of words that rhymed. She placed one picture on each card and made ten student sets of different rhyme families. She now could use the card sets in small groups or with whole class. The students could discover picture rhymes or she could call out a word and have the

students find an illustration of a rhyming word. This provided a fun and easy technique to monitor each student's understanding of rhyming.

Middle school – physical education.

Mr. Thompson typically doesn't have difficulty eliciting overt responses from all his students simply because of the physical nature of his classes. Yet, when the students need to learn the rules of a game, he struggles with engaging activities. He shared this concern with his PLC team. The languages arts teacher shared how she uses "inside-outside" circles. Ten students form an inside and an outside circle, with five student pairs facing each other. Each pair of facing students quiz each other with questions they have written. After a designated time, the outside circle moves one space to create a new pair and the process repeats.

Mr. Thompson used this idea for his next lesson. He had each student write two brief game scenarios describing a "game play" from the sport. They could write about a legal or an illegal action according to the rules of the game. If they included an illegal action, they had to know the type of foul and its name. The class formed inside-outside circles, and read the scenarios to their partners. The partner had to decide whether the play was fair or illegal. Illegal actions had to be named and explained. Mr. Thompson could now monitor his students' thinking and understanding of the rules by listening to the discussions as he walked around the circles.

High school – health.

In a high school health class, the unit on the skin included learning about skin cancer. As the class learned about the layers and functions of the skin, each student built a model of the skin using materials such as sponges, fabric, and yarn. Next, student pairs worked together to research the effects of the sun and skin cancer. Then, the pairs helped each other modify their skin models to include a skin cancer. One model had to illustrate the early stage of the skin cancer,

and the other a more advanced stage. The teacher could monitor student learning by interacting with the pairs as they worked, and assessing the final products that showed how they changed their models to include a skin cancer.

Theme 6: Mid Course Corrections

Elementary – kindergarten mathematics.

Ms. Randall has eight students in her kindergarten class that have mastered shape identification. To provide an extension for these students she developed an activity using images of three abstract paintings that included circles, triangles, and rectangles. She shared the images one at a time and asked students to locate specific shapes. The students had no difficulty finding the circles in the first painting that had circles inside and over-lapping each other. Nor did they have trouble finding the different shapes in the second painting. Most of the shapes in this painting were separated from each other. The third painting had the same three shapes around, in, and through each other.

When Ms. Randall asked the students to find the circles, triangles, and rectangles they only found the separate and more obvious shapes. The students did not identify the many shapes that overlapped and shared spaces. She specifically noted that they had trouble finding different shapes inside other shapes. Such as the triangle inside the circle. Instead of continuing her lesson as planned or simply pointing out the other shapes in the painting, she decided to abandon continuation of the lesson she designed. Instead she introduced the concept of different shapes inside each other. She drew a circle then drew a triangle inside the circle. When the students correctly traced both shapes, she drew a rectangle inside the triangle. When the students could distinguish all three shapes, she asked if someone could draw a circle inside the rectangle. She followed the same process with two more drawings. Finally, she had her students create their

own “shapes in shapes” drawings. She decided she would show the third painting again tomorrow and assess whether the students were more successful at locating all the shapes.

Middle school – 6th grade mathematics.

Emily Rice showed her students three short video clips. The first showed how a dancer used geometry, the second explained how a veterinarian used statistics, and the third illustrated how a backpack designer used ratios.

She then divided the class into groups of four and asked the groups to discuss how math concepts were used in each profession. Ms. Rice noted the limited number of connections her students made as she walked around and monitored the group’s discussions. She thought perhaps she presented too much information at one time that blurred the connections.

She stopped the group discussions and played the first video again. As the video progressed, she paused it at various points and identified connections with math. She probed students to share their thoughts about these connections. She did the same thing with second video, although when she paused this video she did less explanation and asked for more student input. Finally, she showed the third video again. After this one, Ms. Rice asked the groups to meet and discuss the math connections the third video illustrated. The group discussions were now more focused and more accurately identified connections. Ms. Rice made a note to herself that her students need more guidance at making connections between math and other subjects.

High school – 10th grade music.

Frances Killinsworth’s 10th grade chorus was rehearsing a song for the winter concert. The song contained some parts at the higher scale of their vocal sections. Mr. Killinsworth had modeled how to use vowel modifications for some words in these higher parts in order to make the voice tone better. However, as the students rehearsed the entire song they still demonstrated

difficulty forming the sounds correctly. He stopped the rehearsal of the song and wrote the phonetic sounds to sing on chart paper, not the actual spoken pronunciation of the words the students were singing incorrectly. He did this to clearly illustrate the pronunciation they should sing for each word. They practiced singing the words up and down the music scale using the modified pronunciations. He then had the chorus sing isolated parts of the song that contained the words. Mr. Killinsworth knew that if he stopped rehearsals to practice the mispronunciations as they occurred, he increased student success because he prevented practice of incorrect and poor tone. He wanted his choral students to successfully recognize and use good voice quality.

Theme 7: Conscious Attention

Elementary – 3rd grade science.

When Miss Loo's 3rd grade students returned from physical education class, they saw several plastic dinosaurs on the front table. As they took their seats, the students started discussing what they knew about dinosaurs. Miss Loo then made the statement, "Many scientists thought they knew a lot about dinosaurs, but discovered they were wrong." Her students stopped talking and just stared at her. "Scientists make inferences, or hypotheses, from facts they have at a certain point in time. Later when new facts are discovered scientists have to sometimes change what they first thought." Miss Loo then read various examples of ideas about dinosaurs that had to change as new discoveries were made. This activity was Miss Loo's introduction to the scientific process, and she had her students' attention.

Middle school.

Mr. Edwards had a typical teacher's bell on his desk. Yet he never used the bell in the typical "Ring, ring, ring, ring..." manner that teachers often used to gain students' attention. He called the bell the "*Brain Ding*." Whenever he rang the bell, with just one "DING" it meant that

what he just said, or what a student said, or the concept just conveyed - was a very important learning idea - or *Brain Ding*. Mr. Edwards always allowed a few moments of silence after the ring, and would ask why he rang the bell. The bell did not ring often, but when it did his students would pause and rerun in their minds what they just experienced or heard.

High school – American history.

The learning objective for Janice Mellow's American History I lesson was:

Identify important arguments for independence made in Thomas Paine's Common Sense and explain why these arguments helped persuade American colonists that independence was necessary.

Miss Mellow knew that reading historical documents could be very difficult and “boring” for students. So she started this lesson by sharing stories about criminals with no ‘common sense’ to illustrate the concept of common sense in a fun manner and to get her students thinking about common sense. Then, in small groups, the students read and discussed the historical document. She divided the document into parts, and gave only one part at a time to the groups.

After a designated time, the class discussed the separate parts of the document. They focused on the common sense arguments. She also included arguments from contemporary newspaper articles. The newspaper articles illustrated different public views about the common sense relating to various current events. Breaking up the historical document study with discussions about more current illustrations of the concepts helped to refocus and maintain her students' attention.

Theme 8: Chunking

Elementary – language arts.

Early in the school year, Mrs. Jackson showed her students a random list of 50 spelling words and told them that it was the first set of words they had to learn, and they had a month to learn them. At first all she heard was groans. Then one child commented, “We could learn a few at a time.” Using that thought the other students began sharing ideas about how to break the list into smaller segments. Finally, Mrs. Jackson stated, “We need to come up with a plan for how we are going to learn all these words. I want you to get with your think partners and decide how you would divide up the list and explain why.”

After the students worked on this, they shared ideas. Some students just divided the list into equal amounts of words starting from the top. Others put words together that started with the same letters. Some partners grouped the words by common phonetic elements, like the long e sound or silent e words. When she asked the class to choose a class method to divide the list, they agreed that it would be easiest to learn the words when they are grouped together by phonetic elements. Then they set about placing the smaller wordlists on the calendar for the next month. They would pace learning all the words according to the calendar they created.

Mrs. Jackson could have just given the students the words in small groups from the start. The purpose of this activity was to get her students to recognize the value of chunking as they learn.

Middle school – 7th grade dance.

Mr. Kennan showed a video of a five-minute dance that his class would learn. He asked the question, “How would you go about learning this dance?” The students shared they would break the dance into small parts and learn one at a time. Then he asked, “Would you break the dance into equal time parts? Why?” At first the students thought it would be easiest to just divide the dance into equal time parts. Then further discussion led them to understand that certain movements would be easy to learn together, but the movement segments might be different lengths.

Then Mr. Kennan asked, “What would be the first part you would learn, and why? What would be the second part, and why?” In pairs, the students had to decide how and why they would divide the dance into parts to make it easier to learn. The students immediately recognized it would be easier to learn the dance in small chunks. Yet, they had not thought about logical ways to divide the dance, nor if rearranging the practice order of the dance segments might make the overall mastery easier. This is the thinking Mr. Kennan wanted his students to apply to their practice.

High school – environmental science.

Mr. Jeggan often has students in his earth/environmental science classes use non-fiction journal articles to learn new information. This is not easy for his high school students. So at the start of each year, he teaches his students a note-taking strategy using a graphic organizer. The organizer provides divided sections for main topics, and supporting details. It provides an efficient way to organize information gathered from assigned text. At first, Mr. Jeggan helps the students to identify the main topics of articles and to “chunk” together the details. The students use the graphic organizer throughout first quarter. Then, as his students become more skilled at

chunking together ideas and facts from non-fiction resources, the graphic organizer he provides becomes less and less structured.

Theme 9: Connection

Elementary – 1st grade art.

To help his first grade visual arts students understand the concept of still life art, Mr. Krajack begins the class with a game of Simon Says. The game includes the instructions run, hop, and be still. Following the game, he asks students to explain the meaning of “still.” Next, on the front table, he uncovers an arrangement of peaches, pears, and a dish. He asks, “Could these fruits play the Simon Says game we just played?” The students laugh and call out, “No.” Mr. Krajack asks, “Why not?” The students explain that the fruit cannot move; it can only be still. He shows the students a painting, which looks very similar to the arrangement on the table. He explains that when an artist paints a picture of objects that cannot move, it is called a still life. Then he shows them examples of other ‘still life’ art using various materials.

Middle school – 6th grade mathematics.

Ratio is a difficult concept for 6th grade students. To help her students understand ratio, June Billingsly uses a video clip that illustrates how ratios are used to increase or decrease the ingredients in recipes depending on how many people need to be served. Following the video, she has her students use ratios to convert fun recipes like dirt pudding made from chocolate cookies, gelatin, and candy worms. Since her students are more familiar with food measurements, recipes, and serving numbers, they have less difficulty using ratio to alter the recipes.

High school – 11th grade civics.

In her 11th grade civics class, Mrs. Marghetti's students learn about the role of local governments in zoning laws. She always starts this unit by sharing various photographs of locations around the school community and local towns to explain the different zoning categories, such as residential and industrial. She continues to use photos of familiar and popular locations as she shares some "what if" scenarios to explain how zoning laws are meant to protect the integrity of the zoned area. The first scenarios she presents are of obvious situations. For example, "Should the owner of the downtown recreation building be allowed to tear the building down and use the space for a garbage dump?" Then she presents photos and scenarios that are not so obvious. "What if a person who owns a large lot in the Smithstone neighborhood wants to sell some of the land to a telecommunications company to build a cell tower? Should the person be allowed to sell the land to the company?" The photos and questions are intended to help her students understand zoning and to get them talking about the pros and cons of zoning laws.

Following these discussions, she shares a current zoning disagreement from the local community. The students will then research more about the situation and eventually write an opinion paper on the pros and cons of zoning laws. Using local examples makes it easier for the students to relate to the zoning concepts.

Theme 10: Practice

Elementary – 1st grade language arts.

Mrs. Hanson's first grade students love to practice their sight words because the practice is always fun. During their learning center time, there are always one or two sight word games. One is usually a group game like Bingo Words, Go Fish for a Word, or A Candy Land of Words. Other games are for pairs or individuals to play. These games include Concentration Words, Fish the Bowl for Words, SWAT that Word, and different computer word games. Students

repeatedly ask for games to be included in their center time, especially SWAT that Word. They love to use the fly swatter to type out the sight words on the giant size plastic keyboard. To provide more practice, Mrs. Hanson has also made “take-home” packets for many of the games. Her students can borrow a take-home game to play with parents, grandparents, and friends.

Middle school – 8th grade language arts.

Mr. Davies knows there are many vocabulary words, definitions, and concepts (like nucleus, chloroplasts, mitochondria, vacuoles, potential energy, kinetic energy, etc.) that his 8th grade science students must learn and remember throughout the semester. Every Tuesday and Thursday he has “POPCorn” quizzes to enhance their practice with these terms. The students’ scores are not recorded as grades, but rather as “kernels of knowledge” and students keep track of their own knowledge levels. Every correct answer is worth one kernel. There are different levels of achievement. As students reach different levels, there are awards to earn, such as homework passes and science comic books.

Mr. Davies has found that not grading these practice tests creates an opportunity for students to self-monitor and set goals without grade penalties. He has found these regular practice challenges have resulted in higher scores on the graded unit quizzes and tests. When the class average on a graded unit test is 80% or higher, the class celebrates with POPcorn treats!

High school – Spanish 1.

Students have a lot of vocabulary to learn without a wealth of knowledge, experience, or schema to make connections. Señora Delgalious understands that short, high, quality practice, distributed over periods of time is most valuable for initial learning of the vocabulary. She also knows that her students do not get enough time in class for the necessary number of practice sessions. Therefore, she designed and recorded a series of podcast homework practice sessions.

Each student receives a schedule for a series of podcasts that they can listen to directly from the school web site or download onto an audio player. The podcasts provide the students with directed practice that controls the amount of time, and the number of words to practice during each session. The students hear the correct pronunciation for each word, along with hints about how to form the correct sounds for difficult words. The podcasts are guided practices that help students increase the quality of practice.

Theme 11: Personal Relevance

Elementary: 2nd grade technology.

Internet safety is one of the first lessons Ms. Stalick teaches her second grade students in the computer lab. She knows using the computer is very relevant for children, but internet safety is not an interesting topic and a bit abstract for 2nd grade students. To make this important topic more relevant for her students she starts the class by showing a short animated cartoon video on internet safety.

The video is a cartoon comedy that shows all the bad things that happen to one of the characters when he does not follow important internet safety rules. Then she has her students follow two important rules shared in the video. The first is how to use a password to log onto the computer and the importance of keeping the password secret. Before each student receives his password he must review with a partner all the problems the cartoon character had when he shared his password.

The next rule is to only go to web sites that the teacher instructs you to use. Again they review with a partner what happened in the cartoon when the character did not follow this rule. Then, Ms. Stalick directs the students to a game web site where they have to follow specific directions about how to use the computer correctly and safely in order to advance in the game. This gives the students time to use the computer and learn about important computer rules. When they follow all the rules and win the game the students earn an internet safety certificate.

Middle school – 6th grade mathematics.

A standard in 6th grade math involves solving real-world mathematical problems using area, surface area, and volume. To get her students more engaged in lessons addressing this standard, Ms. Hammerstein uses different map and atlas sites available on the internet. She has her students locate interesting places that coordinate with their 6th grade social studies lessons and local places of interest. Using a program that allows the students to zoom in on a location, she asks them questions about specific characteristics they see. Then, using other programs that allow the students to superimpose 2D and 3D shapes on top of the maps or images, she asks the students questions that require them to apply formulas to calculate the perimeter, area, complex area, and volume of 2D and 3D images. She explains how civil engineers use similar tools in their jobs. The students are intrigued about analyzing the real-world locations, particularly ones in their own towns, and they feel like real engineers.

High school – honors biology.

High school honors biology students study microbes and their characteristics. Mrs. Stuart knows that microbes are not very relevant to her high school students' lives. After a very brief introduction to microbes Mrs. Stuart asks her students to take the microbe personality quiz at the Center for Microbial Oceanography: Research and Education web site http://cmore.soest.hawaii.edu/education/kidskorner/microbe_quiz.htm The results intrigue the students and they start teasing each other about their microbe personalities.

There are laminated nametags of all the “personality types” on the front table. Mrs. Stuart tells the students to take a nametag and partner with someone who has the same personality. She directs the students to research their microbe and determine why the quiz assigned them that particular microbe personality.

Theme 12: Locale Memory

Elementary – 5th grade social studies.

Sara Penderro used the 36' x 48' United States map that the PTO painted on the school playground in many ways with her 5th grade students. Today various groups used chunky blue chalk to draw in the major rivers. When all the students were finished, each group had to “walk” the entire class down their river, identify the states they passed, and share other facts they had learned about the river.

Middle school – Spanish I.

Mr. Jeffery planned an active way for his Spanish I students to practice vocabulary and doing/action verbs. He divided the class into groups of three and gave each group a starting clue. The clues were in Spanish and sent the students to various locations and people around the school. Some clues led them inside an empty locker, under the school mascot, or above the visitor sign in the lobby. Other clues involved school personnel, such as the school nurse.

When the students went to a person, they received another clue that instructed them to sing, jump, bark, or perform some action before they could receive the next location clue. All the clues eventually led the students back to the classroom for the scavenger prize... a dish of flan. As the students enjoyed the treat they “complained” and laughed about the places they went and actions they performed, such as: *Cante Centelleo, Centelleo, Estrella Pequeña para el secretario.*

High school – physics.

Ms. Cuellar always begins each semester of her high school physics class reviewing the basics of important physics laws (center of gravity, momentum, rotational inertia, torque, etc.) that her students have learned, but may not recall. The students remember the review all

semester because during the first week of the class she takes her students to a nearby elementary school playground. The swings, slide, monkey bars, jump rope, and balls are the instructional materials. As the students interact with the playground equipment, Ms. Cuellar reviews applicable physics laws. The following day, student groups make a poster of an assigned playground item. On the poster, they record the physics laws that were demonstrated at the playground. These posters are displayed on the classroom walls and throughout the semester, Ms. Cuellar often refers back to the playground adventure, “Remember when you...”

Theme 13: Mental Models

Elementary – 5th grade science.

In a fifth grade classroom the teacher has selected two images that clearly illustrate the concept of wind. The first picture depicts a powerful, fierce, potentially destructive wind. The teacher instructs the students to observe the first image and write descriptive words. Then, she has them observe the second picture that illustrates a gust or strong draft, but not a fierce, destructive wind. Again, the students write descriptive words. The teacher then assigns the students to work in pairs to define wind and the effects of wind. Now the students have a mental model of the different forces of wind as they start the unit.

Middle school – history.

An American History teacher uses the “Story of H.I.P. Pocket Change” as focal point for the course. He directs students to the United States Mint *History in Your Pocket* web site <http://www.usmint.gov/kids/campCoin/timeline> He refers to the web site’s timeline to start each time era. The teacher connects each new era to the people pictured on the coins, and the historical events during the peoples’ lives that impacted the development of United States

currency. This consistent theme helps the students create a mental picture of the time span of the eras and provides an image to connect with each era.

High school – physics.

Students listen in a physics class to the same musical note (A) played on a flute and a violin. The teacher asks the students to describe how each sounds the same and different. Then the teacher explains that when you play a note on a flute, you are only producing one particular tone. When you play a note on a violin, you are not only producing that tone, but numerous harmonic tones as well. He continues to explain that harmonics are waves at proportional frequencies, and at inversely proportional amplitudes. If you play an “A” (440hz) with harmonics, like on a violin, you will not only hear the 440hz tone, but also an 880hz tone at half the volume (first harmonic), a 1320hz tone at a third the volume (second harmonic), a 1760hz tone at a quarter of the volume (third harmonic), etc., until the frequencies get too high or the volume gets too low to be heard. Other notes are played on the different instruments and the concepts of wave frequency, amplitude, and harmonics are discussed. This demonstration helps the students conceptualize these concepts as they learn more about them and begin to use formulas to solve problems.

Theme 14: First Time Learning

Elementary – kindergarten English language learning.

Miss Call’s kindergarten curriculum contains many concepts her students are encountering for the first time. Learning, trying, and sometimes failing while others are watching is a very new experience for most of her students. This can be a deterrent to learning if students become unwilling to try because they are afraid to fail.

Miss Call uses two puppets, Ruby (the Rottweiler) and Roger (the Rocky Mountain Horse), to help teach her students about “learning to learn.” Every morning at circle-time, she shares a short story from the perspective of the characters, like when Ruby tries to fly like a bird and the barn cats laugh at her, or when Roger tries to count by stomping his hoof and has trouble recognizing the difference between 6 and 9. Ideas come from personal experiences and experiences from working with children. The students love the short, simple stories about feelings, learning, fears, and joys told by the animals. Sometimes, later in the year, Miss Call and her students refer to a story that is pertinent to a moment in the classroom. “It’s O.K. to mix up your letters as you are learning Robby. Remember when Roger...”

Middle school – 7th grade language arts.

“Life doesn’t exist in a vacuum.” “What do you think that means class? John?” John answers, “That people are surrounded by things and the things get sucked into their thoughts.” “O.K., Let’s explore more about what you mean.” This was the flow of a discussion in Mrs. Johnson’s 7th grade ELA class as they read a book based on this idiom.

Upon reflection after the class, she was struck by the fact that her students thought a vacuum “sucked-in” things, not that items are pulled as higher air pressure flows into a space with lower air pressure. She knew this was a misconception that could interfere with their future understanding of the events in the story. She decided to take the opportunity to correct the misconception.

She went to her middle school team’s science teacher and explained how the topic of vacuum presented in her class. They decided to switch classes the next day. The science teacher taught a mini-lesson on “how vacuums work” and Mrs. Johnson led a reciprocal teaching activity with a science article. Later when the class was further into the book, Mrs. Johnson re-introduced the idiom, “Life doesn’t exist in a vacuum.” Her students were able to more creatively and more accurately apply the idiom to the events and characters in the book.

High school – art.

Mr. Vilacmer’s art class was ready to throw clay on the potter’s wheel. They had learned about preparing the clay, the wheel and its parts, and the basic elements about throwing a pot. Until today, no student had actually used a wheel with clay.

The first and critical skill is to successfully center the clay. Since there are only three wheels in the art room, Mr. Vilacmer chose to demonstrate to the whole group how to center the clay. He specifically highlighted important actions to be successful at throwing the clay on the

center of the wheel and molding the clay into a centered shape. He shared a poster that had a photo to illustrate each action. When he demonstrated the correct shapes the students should form to center the clay, he gave each shape a name. He called them the gumdrop and bullet. The named shapes provided clear, concrete pictures of the shapes he wanted the students to attain.

He also demonstrated some shapes they should not make, such as the volcano and mushroom. As he did this, he pointed out the errors that typically cause these shapes and how avoid the errors. Then, the students went to work. In groups of three at each wheel, they practiced and coached each other on how to correctly center the clay. The students often referred to the poster as they helped each other. In addition, Mr. Vilacmer circulated and asked questions to reinforce the learning. He often gave guidance by simply asking, “Is that a bullet or a mushroom?”

Theme 15: Neural Downshifting

Elementary – 1st grade language arts.

Spelling is hard for many first grade students because they are just learning to read and write. Miss Heinz did not use the typical weekly spelling list process in her classroom. She felt that process was stressful, wearisome, and often self-defeating.

She called her spelling program the *Alien World of Words* game, a learning process that used video game characteristics. She created lists of eight words, each at a specific difficulty level organized by phonetic sounds and common sight words. She had several lists at each level, with high-frequency words repeated throughout the lists. She has each student design and name a personal avatar for the game. The goal of the game is to have your avatar save the school by outsmarting the aliens from the World of Words. Each child receives an *Alien World Travel and*

Challenge Card and a special silver pencil as their first “tool”. Everyone starts at the first level. Avatars move up levels by earning coins on *Alien Word Challenges*. Each correctly spelled word on a challenge earns one coin. Each level has a specified amount of coins to earn in order to take the *Ultimate Challenge* at that level. To pass the *Ultimate Challenge* the student has to spell five random words chosen from the level. Any avatar that gets stuck at a level (failing the third attempt to pass a level) goes to the *Queen of Word Smarts Training Camp* for assistance with conquering the level. So avatars are never “lost in the alien world.”

There are also fun surprises after completing a group of levels. For instance after passing the fifth level, the player becomes a *Challenge Tester* and learns how to help the *Queen of Word Smarts* (Miss Heinz), give and score classmates’ word challenges. When the twenty challenge levels are conquered, the avatar becomes a *Prince or Princess Word of Smarts*. To keep the title, once a month the avatar must pass a *Smarts Word Challenge* that consists of eight random words from any level. The prince or princess must redo level twenty if they do not pass this challenge. This self-paced, challenge game takes the stress and monotony out of learning to spell. The only problem with the game is that Miss Heinz often received complaints from parents about their children constantly asking practice help for the *Alien World of Words*!

Middle school – 6th grade math.

It is common for Mr. Jarrod to have two to three Spanish ESL students in his sixth grade math class. Much of math is an international language. Yet, if the ESL students cannot understand the instructions then they still are lost and frustrated. To combat this he created an English-Spanish vocabulary list of common math terms and directions. He included terms that are necessary for his math curriculum, like ratio, decimal, and predict. He uses the list as a communication tool with his ESL students. He points to a term and he says it aloud. Saying the

word aloud allows the students to hear him “sound funny” speaking Spanish. This helps the ESL students be less self-conscious about trying English.

He made several laminated translation cards and has them available for anyone to use. He encourages non-ESL math students to use the cards and terms as they work together with an ESL partner. It is a joy to hear laughter from ESL students as their non-Spanish speaking partner try to say the Spanish words. Over time, Mr. Jarrod added to the lists because his ESL students made valuable suggestions for other words to include. He also made a few poster-size charts with the most frequently used words and terms. He and the all the students can refer quickly to the posters during class activities. Mr. Jarrod is delighted that ESL students seem more willing to try and to ask questions in his math classes.

High school – business and marketing.

As a first year teacher, Miss Chen did not want to fall into the ‘teacher on the stage’ trap. She had a large business and marketing class, and it was easy to use lectures to present facts directly and logically. Also as a new teacher, she often used a presentation software program to help her recall the lesson material and pace the lesson flow. She did not want her instructional needs to overtake her students’ learning needs. She had learned in her undergraduate coursework that boredom causes stress, and stress can trigger neural downshifting. Listening to a teacher lecture, even with projected images, can soon become boring.

Therefore, she posted the rule: “For every 10 minutes of lecture, allow for 2 minutes of information processing” on her classroom wall, and explained the meaning to her students. She committed herself to include different processing activities like drawing mental models or thinking aloud with a partner whenever she used lecture in her class. Whenever she broke the rule, her students were quick to remind her that they needed time to process the information.

Theme 16 – Enriched Environments

Elementary – 2nd grade social studies.

Second grade teacher, Elana Shank, understands the importance of creating an environment where students feel welcome. On the first day of school she shares with her students an *All about Us*, photo album style book and explains how each student will add a page. Ms. Shank shows the completed first page that is all about her. On it are family pictures, pets, the title of her favorite book, her favorite foods, a funny story about her, and statement about how she plans to be a positive member of the class. During the first week of school, Ms. Shank sends home a letter to parents/guardians to ask them to discuss their children’s book entries and gather some photographs or to email her digital photos. During class time the students complete

their own pages using a computer template to add information and pictures. If a student does not bring pictures from home, for whatever reason, Ms. Shank takes digital photos at school and encourages the student to add drawings. Once the book is complete, the students take turns bringing the book home to share with their families. Ms. Shank has found this book becomes a wonderful tool for developing the feeling of a classroom family.

Middle school – 7th grade science.

Miss Foreman knows that thinking and performing as a scientist is important for success in her 7th grade science class. Participating in actual lab experiments is an important part of this formula. Yet, most seventh grade students have not actively participated in real science experiments using a lab station. This lack of experience can cause a lot of problems when a whole class is spread out at labs around a classroom.

Miss Foreman has met several science teachers who continue to demonstrate lab experiments, rather than allow students to work at the labs because they want to avoid all the problems. So to establish a real environment of thinking and acting like a scientist, Miss Foreman introduces lab procedures using simple experiments during the first week of school in a very controlled and positive manner. She divides the class into small lab groups of three to four students. She has ten different lab activities and the student groups rotate through each. One station is learning the lyrics to a lab safety song and completing a review sheet that goes with the song. Another instructs students to watch three short lab safety videos and rate each according to a given rubric. There are others to practice measuring liquids, measuring mass, and reading graduated cylinders. Eight stations are designed for indirect supervision of small student groups learning lab procedures; two stations are lab experiments using procedures that require direct

supervision from Miss Foreman. It takes two days for all the groups to rotate through each station.

The next week, the students rotate through similar learning stations that are coordinated with the first science topic. This time there are eight learning stations. Three of these are groups conducting a lab activity with Miss Foreman's supervision. The next lab activity day has four small group stations, and four groups working on a lab with Miss Foreman. This process continues through the first two months of school. Each time the number of students performing actual experiments increases. By November of the school year, each student has safely practiced, with close guidance, all the critical lab procedures; and Miss Foreman is very comfortable having the entire class performing experiments at lab stations, all at the same time, throughout the rest of the year.

High school – English.

Dynamic discussion is a valuable thinking and learning tool in Max Ruby's high school English class. To ensure that all students are involved and feel comfortable sharing their ideas, he uses many different protocols for small and large group discussions. Mr. Ruby has found that using a structured and inclusive dialogue process, such as a protocol, builds an atmosphere of intellectual safety. This is especially important at the start of each semester.

Theme 17: Success

Elementary – kindergarten.

Mrs. Porter loves teaching kindergarten children. Her students usually bubble with motivation and willingness to try. Therefore, when she notices a child not showing effort during a learning activity, she immediately questions why. Is the task too difficult? Does the child perceive the task to be too hard?

That's when she turns to one of the kindergarten puppet friends. With puppet in hand, she will go to the child that is showing no interest or effort and say, "Billy the Bear doesn't feel like sorting these pictures today either. I wonder why? What do you think he will say if I ask him why?" More often than not, the student's response gives Mrs. Porter some insight to why the student is not participating, or not trying.

Using this process, Mrs. Porter can make instructional adjustments to get the students to try harder. Sometimes it just takes helping the child start the task, or breaking the task into smaller steps with encouraging words as each step is attempted and completed. Maybe it is asking another student to be a helper, or reminding the student of the purpose of the finished product.

Kindergarten children show their emotions all over their faces. When Mrs. Porter sees smiles, she knows her students are feeling the success of learning. When children experience success, she is on the right path to getting more effort from every child.

Middle school – 8th grade English.

Jimmy is Mr. Sharer's most challenging 8th grade English student. Jimmy's challenges are not due to misbehavior, but rather withdrawal and little willingness to try. Jimmy has a history of school failure. The frustrating aspect for Mr. Sharer is that Jimmy appears to be a capable student.

After a conversation with Jimmy, Mr. Sharer thinks that Jimmy pictures himself as a bad writer and weak reader. Currently the class is learning how to write opinion pieces with references to research that supports their ideas. Since Jimmy is interested in motocross, Mr. Sharer brought in a teen-magazine on the topic. He asked Jimmy to choose one article to read. Not surprisingly, Jimmy chose a very short, half page description about different tires for the

bikes. With no judgment expressed about the length of the article, Mr. Sharer asked, “Which tires would you purchase? Why?” As Jimmy answered the questions, Mr. Sharer scripted what he said.

Then, he handed the script to Jimmy and asked him to simply rewrite what was on the paper and change anything he thought Mr. Sharer miswrote, or add anything he wanted. Jimmy returned to Mr. Sharer in about ten minutes. “I just changed some words to better motocross terms.” Mr. Sharer responded, “Great, now use the computer to find another article about motocross tires.” Mr. Sharer specifically did not say anything more about writing; that would come after Jimmy successfully followed the directions to find an article. Mr. Sharer was already thinking ahead that he would take time to discuss any article Jimmy located. His goal was to help Jimmy decide whether it was a valid source for information about the motocross tires, or if it would be of more value to search for another. He wants Jimmy to experience little episodes of success and hopefully get incrementally increased effort from him.

High school – physical education.

High school physical education class can be a minefield of adolescent emotions that interfere with motivation and effort. For this reason Mr. Zimmerman often chooses to use activity stations in his classes. He has found he can limit the group size at each station, group students together that will be supportive of each other, design and adjust the station activities to student needs, and add elements of fun to the activities while also targeting a skill.

For example, during a badminton unit, one station has pairs of students using a marshmallow as the birdie. The goal is to get the marshmallow in the partner’s mouth. One partner practices using the badminton racket to serve the birdie, while the other practices watching the birdie in an attempt to get the marshmallow to land in his/her mouth. The focus is

still on skill development (eye to hand coordination), but the fun diverts the typical adolescent self-consciousness. Participation is the first key to skill development. Stations give Mr. Zimmerman more flexibility in managing his high school students' willingness to participate.

Theme 18: Performance Feedback

Elementary – language arts.

Early in the school year, Mrs. Edwards uses a short play, with several characters to get her students to practice reading with expression. Reading with expression is difficult for most children, particularly in front of peers. So, Mrs. Edwards recruited some fellow colleagues to read various parts for her to record. The purpose was to demonstrate reading with expression. After the students read a play silently, she plays the teachers' recording of the play for her students. The class discusses the various expressions of the different characters, the voices used, and the cadence of the actors' readings. This provides an excellent model for the students.

Then, she has her students developed a list of 'reading with expression' techniques that made the play fun to hear and helped make the characters come alive. They also discuss that one job of a director is to give feedback to actors in order to help them perform better. Next, the students practice parts of the play in small groups and coach each other about how to apply the reading with expression techniques they identified. Mrs. Edwards uses the same activities with different plays. She has found that these lessons help establish an understanding and purpose for performance feedback.

Middle school – art.

Commenting on middle school student artwork is a delicate process. First, the work is very personal. Also, Mr. Mueller prefers not to write on the artwork itself. Mr. Mueller gives ongoing feedback while his students are working during class. Yet, he cannot be everywhere at one time, and felt he was not providing timely feedback to all his students.

To solve both issues, he decided he would review student work throughout the day and write his feedback on sticky notes that he could attach to the work. When possible, he would

place the note right at the art element spot that related to the comment. He found he could write feedback using this process during short time segments anytime during the day. When the students arrived for the next art class, they read the notes about what they did well, what they might change, or what they could improve; then they would get right to work. He found some would ask him to elaborate more on a statement, or demonstrate what he meant.

It became a very positive routine. It even helped to develop better peer assessment. One day he placed student watercolor paintings on the walls around the art room. With sticky notes in hand, the students left feedback on their classmates' work based on the principles of watercolor and other art elements they had learned. It worked wonderfully as a learning tool for both the feedback giver and receiver.

High school – technology.

In his high school computer class, Mr. Santos' students were applying the skills they learned about using a software graphing program to produce graphs from data they were given. At the start of the class, he gave each student a printout exemplar of two well-designed graphs using the computer program. On it were feedback statements that identified the specific elements that were done well. At the end of class, he asked the students to print out their graphs, at whatever point of completion they had reached. They were instructed to use the exemplar and make comments on their own graphs about what they thought they had done well, what they may need to improve, or change. They also could write questions or problems he did not get a chance to address during the class. In addition, they had to state what their next step will be when they return to class the next day.

At the conclusion of the next class, he instructed the students to do the same thing. When each student completed the assignment, they had to turn in their daily evaluations with their final

product. This activity gave Mr. Santos the opportunity to not only give feedback on his students' final product, but also to comment on the thinking process they used to judge their own work progression toward completion of the final product.

Theme 19: Stagecraft

Elementary – language arts.

Mrs. Eden was digging in her classroom closet one day and found a set of old flannel board figures that coordinated with several classic picture books. She had not seen a flannel board in years, but she decided to use the pieces as she read one of the stories to her students. She made a flannel board to place on a chart holder, and the next day read *May I Bring a Friend?* by Beatrice Schenk de Regniers and illustrated by Beni Montresor. She used the story to practice rhyming words and to talk with the students about manners. The children loved the scenes she made using the flannel pieces while she read the story. During center time a few students asked if they could play with flannel pieces and board. Soon she spotted them recreating the scenes and retelling the story. They were practicing retelling and rhyming! Flannel board stories became a new teaching tool for Mrs. Eden.

Middle school – art.

Mr. Gatenbergs's middle school art students learned about many visual arts styles, such as Art Nouveau, Art Deco, Cubism, and the Aztecs. For a review activity, he placed various sized art replications of different styles around the room. The students had to study each piece and categorize it by style. He told the students they were museum curators and were analyzing artwork for their museums. Then, he darkened the room and turned on lights to highlight each art piece. This made the room feel more like a museum than a classroom.

High school – physics.

Mr. Mason's physics class was one of the students' favorites. In addition to many hands-on lab activities and interesting teacher demonstrations in his class, Mr. Mason just seemed to know how to make physics fun. For example, he knew that some lecture time was necessary, and there were times he simply had to share and review information with his students. So he called these class times the *Einstein Brain Gain Times*. He explained to his students that since Einstein and others had already discovered a lot about physics, it was valuable to save time and just learn from their troves of knowledge. To emphasize this point, each time a class activity resembled a lecture, Mr. Mason put on a lab coat and an Einstein wig. The students would always comically moan and groan about the costume and the lecture time. Yet Mr. Mason knew that the costume was an expected component that made the lecture time more appealing.

Theme 20: Complementary Elements

Elementary – 2nd grade language arts.

One spelling activity Mrs. Jackson's second grade class enjoys is *Big to Little* spelling. This activity has the students start by standing and writing the spelling word in the air. Then, they write the word on their desks using their fingers. Next, they do the same on the palm of their hands. Finally, they pick up their pencils and write the word on paper. The routine continues for each word.

Middle school – science.

Students in Mrs. Takano's class always enjoy the science activity where they identify unknown minerals by using different mineral properties to test each and gather clues. To reinforce their learning Mrs. Takano switches the activity around. She gathers up all the minerals and places them in a bag. Then she chooses one mineral from the bag and does not

allow the students to see it. She gives clues about the mineral and the students have to use the clues to figure out which mineral she chose.

High school – merchandising.

When Ms. Cameron teaches the unit on the historical development of the fashion industry, she always combines her lecture sessions with student activities where the students can use their creativity. This helps combine their understanding of the details of the fashion with the larger concept of style.

She has the students make a digital collage of fashions depicting an era, or find pictures of famous people of the era wearing classic examples of the styles. Her favorite is when they study the sixties to mid-seventies. She instructs the students to gather clothing from home and elsewhere to create an outfit that represents the era. The students always have a lot of fun modeling their Disco and Flower-Power outfits.

Theme 21: Time and Timing

Elementary – 4th grade math.

Mrs. McLean finished a 4th grade math lesson on long division. She was very pleased with the focus and effort her students gave to the activities throughout the lesson. Long division was a hard concept for her students, and they obviously were brain weary from the determination and persistence they had applied. A social studies lesson on state history was next on the class schedule. She had planned a small group activity for her students. The students would work together using a graphic organizer to research information about historical people from the state. She originally figured this activity would be a change from the mostly individual work during the previous math lesson.

She decided, however, that the students might not put forth the effort they would need to do the research since they appeared so mentally drained. Therefore, she quickly made a change in plans and decided to teach the following day's social studies lesson instead. For this lesson, she had an interesting movie that shared historical state monuments, homes, and other locations. Most of the points of interest were related to the historical people the students would research. During the movie the students would use a note sheet to record information. This lesson was definitely less intensive. She could easily switch the lessons, and tomorrow transfer the information from the movie to the research activity.

Middle school – 7th grade.

Miss Bide's 7th graders were not good at pacing their efforts with the given time allotments. She knew her students were familiar with the lyrics of many songs, and they had a sense of how long a song lasted. So, she found that she could play an appropriate popular song softly in the background as her students worked and use the song to pace their efforts. She would state, "You should be done with the first activity by the end of this song" or "You have until the middle of this song to get your materials ready." The students' understanding of the song parts and lengths gave them a more concrete way to pace themselves.

High school – health and wellness.

Brent Minchin taught high school health and wellness. High school students generally have a good understanding of the human reproductive system and the reproductive process. Yet, this unit could still cause uneasiness and unsuitable classroom behavior. Knowing this, Mr. Minchin always planned for this unit to occur about three-quarters of the way into the semester. That way he had time to create a positive classroom atmosphere. He took time to get know his students and used learning activities to help the students feel safe, respected, and emotionally

comfortable in his class before teaching this unit. This process provided him with more student behavior controls during the unit lessons.

Theme 22: Personal Presence

Elementary school.

Ms. Fuser had several stuffed teddy bears on a shelf in the classroom. The bears were used for one purpose. When a student was absent, his or her assigned classroom buddy would choose one of the bears to sit in the absent child's seat. The bears were visual reminders to collect classwork and materials for the absent child. The buddies also had to bring the bears to different class activities throughout the day such as music class, lunch, or recess.

The purpose was to remind everyone that a classmate was absent, and a part of the class family was missing. It was common to hear a student say something similar to, "Hey, Ruby you forgot to get Billy!" when the class was about to leave the room. Ms. Fuser discovered that this system benefitted the classmates present, and the absent child. After an absence, children would always ask, "Which bear was I?" They knew their absence was recognized and they were in the thoughts of everyone while they were gone.

Middle school – 6th grade.

Mrs. Cummings recognized that her sixth grade students displayed periods of disrespect, unwillingness to try, poor sportsmanship, or other traits that sometimes seemed to spread like germs. At times, the attitudes interfered with the whole class atmosphere. This is when she would call to order a class meeting. She would objectively share her concerns, without using specifics or names, and ask the students for their thoughts about changes to make. This seemed to help everyone clarify issues and energize positive actions. Following one class meeting a student said, "Mrs. Cummings, I like it when you share class problems and ask for our ideas. It

makes me feel like you think we are important.” This was a reminder to her that what she does, not just what she says, makes the most impact on her students.

High school – masonry.

Mr. Fry was demonstrating to his Masonry I class how to lay bricks to build a level wall. He demonstrated how to measure the length according to a plan, how to start laying the bricks from each end, and how to use the level. As he demonstrated, it seemed to the students like he was an artist creating a masterpiece. As they watched him create, he suddenly stopped and said, “Oh wait, you guys are supposed to do this. Get to your stations and get to work.” One student then commented that she enjoyed watching him work. “It’s like you talk to the bricks as you work. Watching you work makes me want to do the same thing.”

Theme 23: Delight

Elementary – 1st grade language arts. Ms. Levin had a creative way for her first grade students to practice their sight words. She made labels of the words to practice and placed them on strips of medium size bubble wrap. At a learning center, there were several packets of the bubble wrap words. A pair of children would scatter one packet on the floor. Then, taking turns, one would read the word on an index card and the other had to find the word and “stomp” on it. It was one of the students’ favorite centers.

Middle school – 6th grade science. When Mrs. Casters’ 6th grade science students walked into the classroom, the song, “Don’t Touch That” was playing. Also there was a large covered container of a green substance on a table at the front of the room. A sign near it stated: *Don’t touch this!* Of course Mrs. Casters received many questions about the container as the students arrived. She simply responded that they would find out about it later in the class.

Then, after a class review of the states of matter, she opened the lid and punched down at the substance. A “*SMACK*” sound was made. She asked the class if it was a solid, liquid or gas in the container. They all called out, “A solid.” Then, she had one student come up to feel the substance to verify that it was a solid. When the child put his hand in the container it easily moved down through the substance and he called out, “No way!” The class was confused. She then gave each student a small, clear, plastic glass of the substance so they all could explore its qualities. It was a mixture of water and cornstarch. This mixture has a different thickness depending on the force applied. Next, Mrs. Casters introduced the terms Newtonian and non-Newtonian fluids, and went on to teach about substances that do not fall neatly into the solid, liquid, or gas categories.

High school - administration. One day during the long academic stretch between January and April, all the teachers at Mr. Cebone’s high school entered their classrooms and found a decorated plastic cup on their desks. Attached to it was a note that read: *You highlight our school*. In it were three highlighters. It was amazing how a little surprise could energize the mood of the faculty.