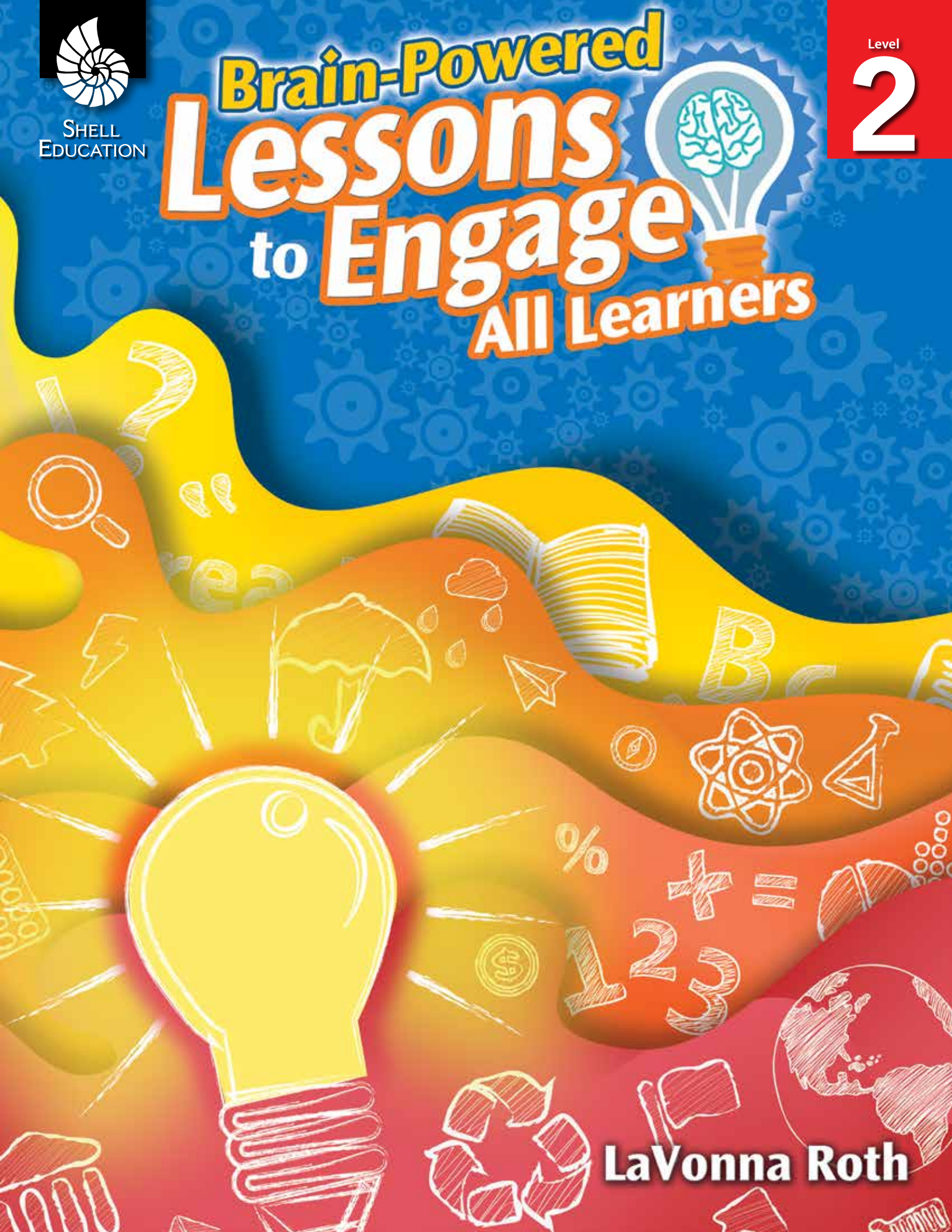
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All Learners
LaVonna Roth

Level

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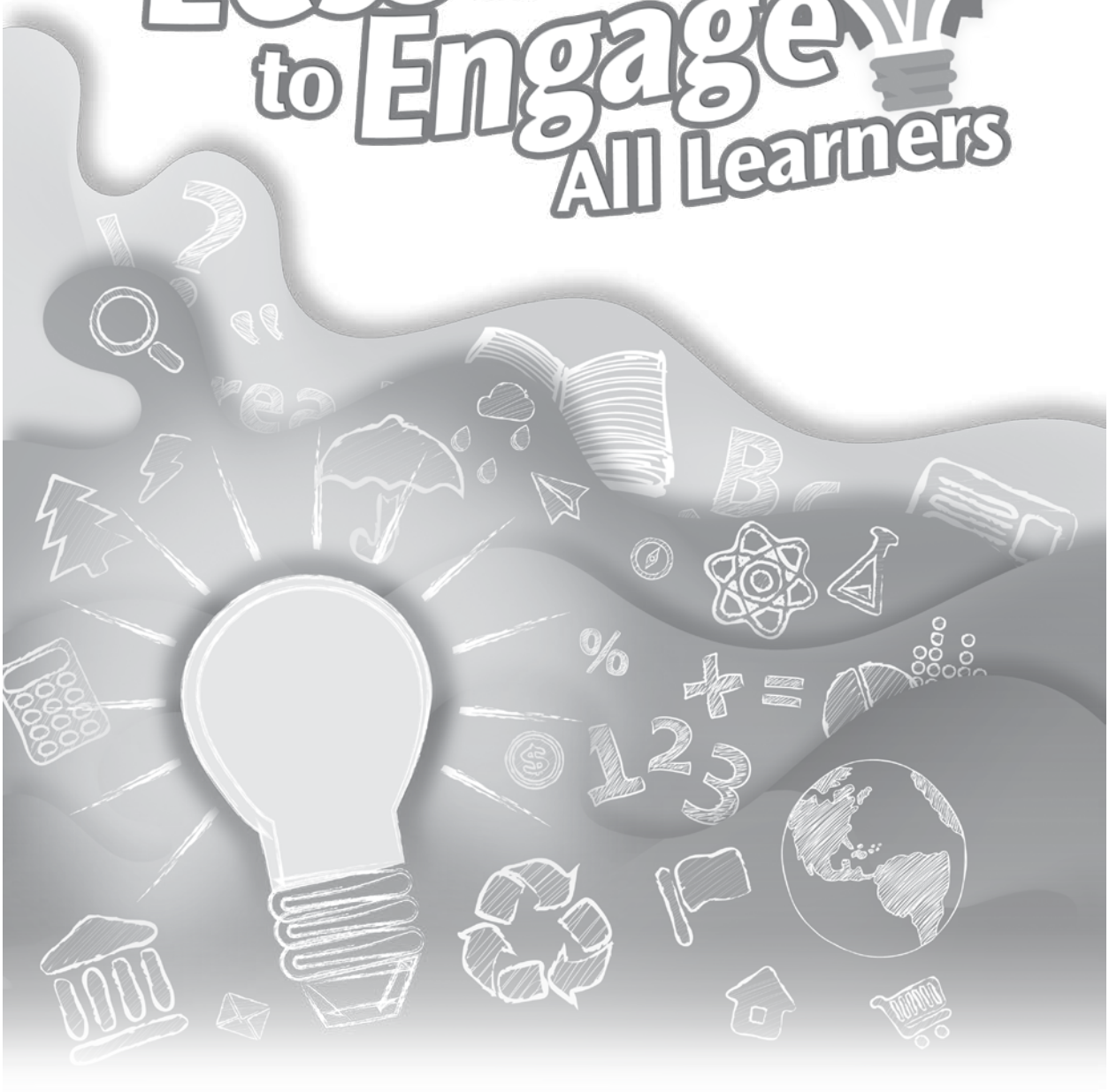
Brain-Powered Lessons to Engage All Learners



Author
LaVonna Roth, M.S.Ed.

Shell Education

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Robin Erickson, *Production Director*; Lee Aucoin, *Creative Director*;
Timothy J. Bradley, *Illustration Manager*; Emily R. Smith, M.A.Ed., *Editorial Director*;
Jennifer Wilson, *Editor*; Evelyn Garcia, M.A.Ed., *Editor*; Amber Goff, *Editorial Assistant*;
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Shell Education
5301 Oceanus Drive
Huntington Beach, CA 92649-1030
http://www.shelleducation.com

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A Letter to You

Dear Educator,

I want to take a moment to thank you for the inspiration that you are! As more mandates fall upon your shoulders and changes are made, I admire your drive, passion, and willingness to keep putting our students first. Every decision we make as educators should come down to one simple question: "Is this decision in the best interest of our students?" This reflects not our opinion, our philosophy, or our own agenda, but simply what is going to make the greatest impact on our students in preparing them for life and career.

As you continue to be the best you can be, I want you to take a few moments each day, look in the mirror, and smile. Come on—I know you can give me a bigger smile than that! Go for the big Cheshire Cat smile with all teeth showing. Why? Because you are sometimes your greatest cheerleader. Now, take that same smile and pass it on to colleagues, students, and parents. Attitude is catching—so let's share the one that puts smiles on others' faces! You will feel better and your day will be better.

Now, tear out this page. Tape it to a place where you will see it every. . . single. . . day. Yep! Tear it out. Tape it to the bathroom mirror, your dashboard, your desk—wherever you are sure to see it. Recite and do the following every single day—no joke:

I am appreciated!

I am amazing!

I am the difference!

From one educator to another, thank you for all you do!

—LaVonna Roth

P.S. Be sure to connect with me on social media! I would love to hear from you on these strategies and lessons.

About the Author

LaVonna Roth, M.S.Ed., is an international author, speaker, and consultant. She has had the privilege of working with teachers on three continents, sharing her passion for education and how the brain learns. Her desire to keep the passion of engaging instructional delivery is evident in her ideas, presentations, workshops, and books.

LaVonna has the unique ability to teach some of the more challenging concepts in education and make them simple and doable. Her goal is for teachers to be reenergized, to experience ideas that are practical and applicable, and have a great impact on student achievement because of the effect these strategies have on how the brain learns.

As a full-time teacher, LaVonna taught students at the elementary and secondary levels in all content areas, students in ELL and gifted programs, and those in the regular classroom. Her educational degrees include a bachelor's degree in special education—teaching the hearing impaired—and two master's degrees, one in the art of teaching and another in educational leadership. In addition to other professional organizations, LaVonna serves as a board member for Florida ASCD and is an affiliate member of the Society for Neuroscience.

As an author, she has written a powerful resource notebook, *Brain-Powered Lessons to Engage All Learners*, and is a dynamic and engaging presenter.

When LaVonna isn't traveling and speaking, she relaxes by spending time with her family in the Tampa, Florida area. She is dedicated to putting students first and supporting teachers to be the best they can be.

Acknowledgements

My family
My friends
All educators
Teacher Created Materials staff

I believe we accomplish great things when we surround ourselves with great people and take action. Thank you for all you do!

—LaVonna Roth

The Power of the Brain

> "What actually changes in the brain are the strengths of the connections of neurons that are engaged together, moment by moment, in time."
>
> —Dr. Michael Merzenich

The brain is a very powerful organ, one we do not completely understand or know everything about. Yet science reveals more and more to us each day.

As educators, we have a duty to understand how the brain learns so that we can best teach our students. If we do not have an understanding of some of the powerful tools that can help facilitate our teaching and allow us to better target the brain and learning, we lose a lot of time with our students that could be used to serve them better. Plus, the likelihood of doing as much reteaching will lessen.

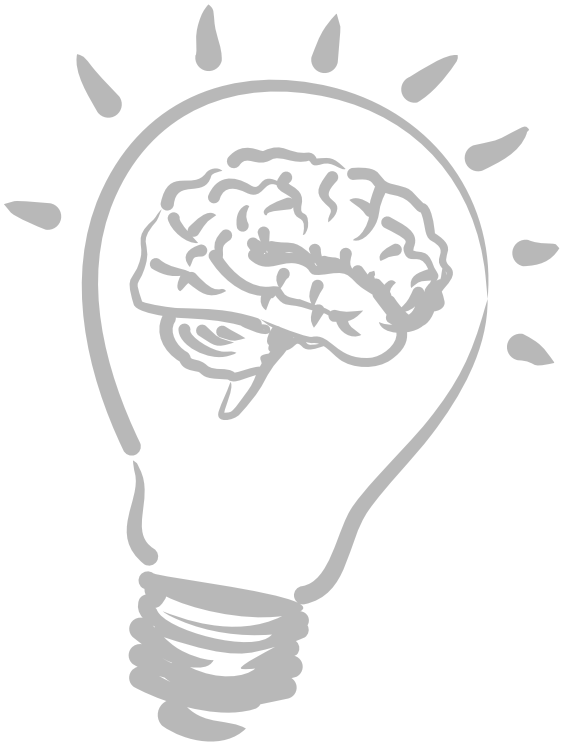
This is where *Brain-Powered Lessons to Engage All Learners* comes in! The eight strategies included within the lessons are designed around how the brain learns as a foundation. In addition, they are meant to be used as a formative assessment, include higher-order thinking, increase the level of engagement in learning, and support differentiation. For detailed information on each strategy, see pages 12–19.

What Makes the Brain Learn Best

As you explore the strategies in this book, keep the following key ideas in mind.

The content being taught and learned must:

- be engaging
- be relevant
- make sense
- make meaning
- involve movement
- support memory retention



The Power of the Brain *(cont.)*

Be Engaging

In order for students to pay attention, we must engage the brain. This is the overarching theme to the rest of the elements. Too often, students are learning complacently. Just because students are staring at the teacher, with pencil in hand and taking notes, does not mean they are engaged. For example, we know that they are engaged when they answer questions or are interacting with the information independently with a teacher or another student. We don't always know when they are engaged just by looking at them. Sometimes, it's a simple question or observation of what they are doing that helps identify this. Body language can tell us a lot, but do not rely on this as the only point of observation. Many teachers may have not gone into teaching to "entertain," but entertaining is one component of being engaging. As neuroscience research has revealed, it was noted as early as 1762 that the brain does change (neuroplasticity) based on experiences (Doidge 2007). It rewires itself based upon experiences and new situations, creating new neural pathways. "Even simple brain exercises such as presenting oneself with challenging intellectual environments, interacting in social situations, or getting involved in physical activities will boost the general growth of connections" (HOPES 2010, §2). This is fantastic if we are creating an environment and lessons that are positive and planned in a way that fires more neurons that increase accurate learning.

"Even simple brain exercises such as presenting oneself with challenging intellectual environments, interacting in social situations, or getting involved in physical activities will boost the general growth of connections" (HOPES 2010, §2).

The Power of the Brain *(cont.)*

As a reflection for you, think about the following with respect to student engagement:

- What are the students doing during the lesson? Are they doing something with the information that shows they are into it? Are they asking questions? Are they answering?
- What is their body language showing? Are they slumped, or are they sitting in a more alert position? Are their eyes glazed and half-closed, or are they bright, alert, and paying attention to where their focus should be?
- Who is doing most of the talking and thinking? Move away from being the sage on the stage! Let the students be the stars. Share your knowledge with them in increments, but permit them to interact or explore.
- What could you turn over to students to have them create a way to remember the content or ask questions they have? What could be done to change up the lessons so they are interacting or standing? Yes, parts of lessons can be taught by having students stand for a minute or so. Before they sit, have them stretch or high-five a few classmates to break up the monotony.

Be Relevant

Why should the brain want to learn and remember something that has no relevance to us? If we want our students to learn information, it is important that we do what we can to make the information relevant. An easy way to achieve this is by bringing in some background knowledge that students have about the topic or making a personal connection. This does not need to take long.

As you will note, the lessons in this book start out with modeling. Modeling allows learners to have an understanding of the strategy and it also takes a moment to bring in what they know and, when possible, to make a personal connection. Consider asking students what they know about a topic and have them offer ideas. Or ask them to reflect on a piece of literature that you read or to ponder a question you have provided. For English language learners, this strategy is particularly effective when they can relate it to something of which they have a foundational concept and can make a connection to what they are learning. The language will come.

Make Sense

Is what you are teaching something that makes sense to students? Do they see the bigger picture or context? If students are making sense of what they are learning, a greater chance of it moving from working memory to long-term memory will increase. Some students can be asked if the idea makes sense and if they clearly understand. If they are able to explain it in their own words, they probably have a good grasp on metacognition and where they are in their learning. Other students may need to be coached to retell you what they just learned.

The Power of the Brain *(cont.)*

Make Meaning

Once students have had an opportunity to make sense of what they are learning, provide an opportunity for them to make meaning. This means that they have a chance to apply what was learned and actually "play" with the skills or concepts. Are they able to complete some tasks or provide questions on their own? Are they ready to take the information to higher levels that demonstrate the depth of understanding? (Refer to Webb's Depth of Knowledge for some additional insight into various levels of making meaning on pages 22–23.) For some students, simply asking a few questions related to what is being taught or having them write a reflection of what was just explained will allow you to check in on their understanding to see where they are before taking their thinking to a higher or a deeper level.

Involve Movement

This one is particularly important because of the plethora of research on movement. Dr. John Ratey wrote the book *Spark*, which documents how student achievement soars based on some changes made to students' physical education program in which students achieved their target heart-rate zone during their physical education time. Movement, particularly exercise, increases brain-derived neurotrophic factors (BDNF) that increase learning and memory (Vaynman, Ying, and Gomez-Pinilla 2004).

Knowing that getting students to achieve their target heart rate zone is not always an option, do what you can. Have students take some brain breaks that heighten their heart rate—even if for just a minute.

Movement has strong retention implications in other ways. Students can create a gesture connected to the lesson concept, or they can stand and move while they make meaning from what they learned. Movement is multisensory, thus, various regions of the brain are activated. When multiple brain pathways are stimulated, they are more likely to enter long-term potentiation from activating episodic and semantic memories.

If you come across a model lesson in this book in which not much movement is shared, or you find your students have been sitting longer than you may wish (you will know because their body language will tell you—unfortunately, we should have had them moving before this point), my challenge to you is to think of what movement you can add to the lesson. It could involve a gesture, a manipulative, or physically getting up and moving. If you are concerned about them calming back down, set your expectations and stick to them. Keep in mind that often when students "go crazy" when permitted to move, it's probably because they *finally* get to move. Try simple techniques to bring students back into focus. "Part of the process of assisting children in developing necessary skills is getting to the root of why they behave as they do" (Harris and Goldberg 2012, xiv).

The Power of the Brain *(cont.)*

Support Memory Retention

If we want our students to retain what we teach them, then it is important that we keep in mind what causes our brains to retain that information.

Key Elements to Memory Retention	Why
Emotions	We can create an episodic memory when we connect emotions to our learning.
Repetition	Repetition increases memory as long as there is engagement involved. Worksheets and drill and kill do not serve long-term memory well.
Patterns/Organization	When our brains take in messages, they begin to file the information by organizing it into categories.
Personal connection	Linking learning to one's self is a powerful brain tool for memory. This, too, can be tied to emotion, making an even stronger connection.
Linking new and prior knowledge	Taking in new information automatically results in connecting past knowledge to what is new.

(Roth 2012)

As you explore the strategies and lessons throughout this book, note how many of them incorporate the keys to memory retention and what engages our students' brains. As you begin to explore the use of these strategies on your own, be sure to keep the framework of those important components.

The bottom line—explore, have fun, and ask your students how they feel about lessons taught. They will tell you if they found the lesson interesting, engaging, and relevant. So get in there, dig in, and have some fun with your students while trying out these strategies and lessons!

Kinesthetic Word Webs
Strategy Overview

Movement is crucial to learning. We must move because the "sit-and-get" method is overused and not as effective as when we have the chance to increase our oxygen intake and shift the activity. Although there is no exact science as to the number of minutes that elapse before we should move or change direction, no more than 20 minutes is an adequate amount of time for learning to occur before we do something with what was learned (Schenck 2005). Our working memory can only hold so much information before it becomes fatigued or bored (Sousa 2006). Thus, implementing the suggested 20-minute time frame into teaching should help teachers to remember the importance of chunking material and allowing time for the brain to process material being learned.

We know what a web is on paper, but what is a *Kinesthetic Word Web*? It is a strategy that gets students up and moving with the content of the lessons. Picture a word web on paper. Now, turn the outer ovals on the word web into students and imagine their arms touching the person's shoulder in the center oval. That is a *Kinesthetic Word Web*.

Strategy Insight

The *Kinesthetic Word Webs* strategy is designed to take a paper-and-pencil activity and add movement and challenge to raise the level of engagement. As Wolfe and Brandt (1998) state, "The brain likes a challenge!" It seeks patterns. Patterns are required during this strategy in order to be successful.

Teacher Notes

- Be sure every student has a card. Do not worry about every student fitting into a word web. If a student cannot be a part of a *Kinesthetic Word Web* because his or her word has already appeared in the web or because there was not an exact number of students for each set, they can explain where they would go and why.
- **Caution**: Some students do not like to be touched, so knowing students and their backgrounds is very important. As an alternative, they can each place a fist on a hip and connect elbow to elbow; they can extend a leg and touch foot to foot; or you can provide 15 inches of string to each student, with the center student holding one end of all the strings.

E-L-A-B-O-R-A-T-E
Strategy Overview

When students write, they often have trouble with elaboration. It may be a struggle for them to add more detail and expand on their thinking. Our brains tend to pick up on the gist of things (a survival instinct), instead of the details. We have to learn to pay attention to details, and that can occur through practice (Jensen 2006). This strategy helps students focus on details as they learn to elaborate simple sentence starters and make them substantial and comprehensive.

How can students elaborate? One way is to show students how to add a kinesthetic (movement) component to understanding the length of a sentence. Movement also adds a visual component—one watches the movement as words are written on the board. Read the words aloud, and an auditory feature is added. Research by David Sousa (2006) has shown that the three senses that contribute the most to our learning are sight, hearing, and touch, including kinesthetic experiences. In this strategy, all three play a part in students' thinking and thus learning.

Strategy Insight

Educators often get the idea in their heads that faster is better. Teachers want students to state their math facts faster, read faster (fluency), and be ready to "regurgitate" a fact from rote memory. This strategy will teach students the skill of adding details through observation, thought, and understanding and will prepare them to elaborate but not create run-on sentences. Students will grasp the idea of building something through elaboration and carrying it over into their writing.

Teacher Notes

- During the Evaluate step, students who are ready should begin to formulate their own questions, moving the instruction toward learner centered and away from being teacher centered.
- To differentiate, allow students to work with partners who are further along in their writing skills, or to illustrate pictures and add more details to the pictures after using their hands to model elaboration. Students that are ready can write clear, concise, and specific paragraphs that focuses on elaboration.

Response Cards
Strategy Overview

This strategy allows the teacher to receive a response from each student within a short time frame, and it provides the feedback you need to drive instruction. Once students have responded, they discuss their thinking with a partner. This is the teacher's opportunity to listen in on their conversations. If they got the answer right, was it for the right reason? If it was wrong, where did their thinking go astray?

Post higher-order thinking question stems around the room. Teach students how to use these stems to ask questions. If teachers want to raise the level of inquiry and understanding, students need the resources to do so, which includes modeling how to ask a question that taps into thinking and then allowing them to question (Hunter 1993). By doing this, students become more metacognitively aware by figuring out the connections they made (Baker 2009). What did they know beforehand that helped them connect the question asked to their response? If they were struggling between two answers, what were they thinking that caused them to choose one answer? Another great technique to encourage depth of thinking is to ask open-ended questions, such as *Why?* or *How do you know?* (Sprenger 1999; Willis 2006). When students provide an answer followed up by *why* or *how do you know*, their initial reaction may be that they are wrong, which sends them into a thinking mode to figure out where they went wrong. Share with students that they may not be wrong; encourage them to think their answers through.

Strategy Insight

Response Cards are an alternate way to formatively assess students' thinking without using whiteboards. Since our brain's attention piques with novelty, *Response Cards* allow students to give teachers feedback in a different way. Students think independently, respond, and then show their answers. Students receive premade *Response Cards* that have answers on them, or older students can write the answers themselves. Answers on the response cards should be written in the same location so they can quickly be seen and checked for accuracy.

When students share their answers, it is important they justify their thinking. This allows them to make connections and take the strategy to a higher level. The teacher should listen to students as they talk with others to see if their thinking is correct. This gives the teacher an insight into students' thinking. Plus, knowing they hold them accountable helps with classroom management.

Teacher Notes

- When students share their thinking with partners, it is important to listen in to see if there are any misconceptions or to find out who is struggling with the concept.
- Encourage students to know it is acceptable to question authority in a respectful manner. Just because something is said by an authority figure does not mean it is always right.

Matchmaker
Strategy Overview

The importance of movement and having students get up out of their seats cannot be emphasized enough. Thus, here is another strategy that allows our students to do so. *Matchmaker* also provides students an opportunity to get repeated practice in an environment in which the repetition is guided and correct. This means that when students practice repeatedly, the likelihood of recall increases. A key factor here is that it must be correct practice. When students do this activity with one another, they are getting a chance to see repeated practice with automatic feedback provided about whether they are correct or not.

Strategy Insight

Every student is given an address labels to wear. Each label is a vocabulary word, a concept, a formula, etc. On index cards are the matching definitions, illustrations, examples, synonyms, etc.

Students wear the address labels and stand in a circle with the index cards on the floor in the middle. Students hold hands and bend down to pick up an index card with their connected hands. Without letting go, they have to get the card they picked up to the correct person, according to his or her address label. This strategy can be repeated as many times as you wish to help students practice.

Teacher Notes

- An alternative to this is for students to not hold hands when they pick up a card. However, energy and engagement increase with the added challenge of holding hands and not letting go.
- Be sure to listen in and encourage students to discuss disagreements or to have them respond to a reason why a particular card goes with another card.

Just Say It
Strategy Overview

Working together and hearing thoughts and language are beneficial to all learners, but these things can be especially beneficial to English language learners. *Just Say It* permits students to not only use what they have read, written, or heard but have a chance to use listening skills for the content as well. A challenge layer to this strategy is having students hold back on a response for a period of time. This allows the other student to say what he or she needs to say before the partner inflicts his or her opinion or factual information upon him or her. It teaches the skill of patience, listening, and being open to others' thoughts at the same time.

Strategy Insight

Students are to respond to their partners, providing feedback and information on a given topic (e.g., a writing prompt, thoughts, an idea). Have students sit facing their partners (sitting at desks is preferable). Identify Partner *A* as the person closest to the front of the room and Partner *B* as the person closest to the back of room. Have Partner *A* start. Partner *A* shares his or her thinking with Partner *B* as Partner *B* only listens for 30 seconds. After 30 seconds, Partner *B* responds to Partner *A*. They then switch roles—Partner *B* shares while *A* listens. Then *A* provides insight or feedback. Students should record (during or at the end) what their partners say for further consideration, and use that to write about the topic.

Teacher Notes

- You may wish to shorten or lengthen the time each partner has, depending upon the topic and age.
- Using a timer, a train whistle, or a bell is a great way to help partners know when to switch, since conversations may get lively or partners may tune out other nearby sounds.

In the Know
Strategy Overview

The *In the Know* strategy allows for students to be involved in the process of self-assessing their own learning. It helps take their learning to a metacognitive level, where students are thinking about thinking (Siegel 2007). As students work with content, they position labeled sticky notes that reflect their knowledge. When students' understanding increases, they move their sticky notes to another column to show further growth. This should increase intrinsic motivation as they see how their hard work pays off.

When students evaluate themselves and demonstrate achievement, teachers should ask students to explain to them how their learning has grown. When teachers use this strategy as a formative assessment, it helps to guide the next phase of instruction.

Strategy Insight

In the Know helps students understand the importance of being cognitively aware of what they are learning and what causes them to struggle. During this strategy, students use a three-column graphic organizer to capture their current understanding of content. Students label each sticky note with a vocabulary word, concept, skill, etc. As they reflect on what they know about each label, they determine where to place the sticky note. The far-left column represents labels they are not sure of and are not competent enough to use accurately in their work. The middle column indicates when they begin to gain an understanding or familiarity of what the label means, yet they cannot use it appropriately in their work. The third column marks when students have achieved a level of accomplishment or mastery in understanding the label.

It is important for students to take the time to celebrate their learning. When students move their sticky notes to the next column to validate that their learning has increased, they can pat themselves on the back for their achievements or tell someone how they worked hard to understand the concept. This may occur throughout the lesson, or toward the end of the study. This emotional attachment will provide a boost of memory (Willingham 2009).

Teacher Notes

- Sticky notes are a novelty at first, and students will most likely play with them. The good news is that the novelty will taper off. For younger students, it may be better to keep their three-column chart in a folder until it is time to reassess their learning.
- Ask students to justify each sticky note's placement.
- Modify this strategy for younger students or students with disabilities by writing sentences or designing a skit for the words that they have not mastered.

WPH Accordion
Strategy Overview

Think of a mystery story. Who or what is involved? What do you predict will happen? What does happen? These questions make up the *WPH Accordion* strategy. Each of these components plays a key part in motivation, engagement, and memory.

Asking *who* or *what* is involved (*W*) preps our brains to think about the topic. Who or what could be involved in the story, event, experiment, or solution? This question piques our brains interest because we want to know. The brain likes to learn (Willis 2008).

What do you *predict* (*P*) will happen? Our brains love to predict and to get it right. When our predictions are right, dopamine receptors are activated and our brain experiences that as pleasurable, which increases our reward response (Rock 2009). Emotions come into play, which is important for long-term memory (Jensen 2005). When our predictions are wrong, dopamine levels reduce and the brain works to remember it correctly so it can have the pleasure from dopamine rising (Willis 2008).

What actually *happens (H)*? The brain receives the message whether the prediction is right or not. Our brains use this information for future predictions. Did what we think was going to happen occur?

Strategy Insight

When working with students, it is important to create a culture in which it is okay to be wrong. Often, predictions are wrong; it is how we react that makes a difference. What matters is what we do with that information. If students pull what they know from background knowledge to figure out a mystery component and if they ask questions based on what they know, then that is a start to making good predictions. Teachers should empower students to become aware of what they know and what they are thinking, and that being wrong tells their brains to pay attention to the correct way (Flavell 1979; Willis 2008; Baker 2009).

Students work with topics that have a twist or an unexpected outcome. This allows us to think logically about a solution and also pulls information from the creative side of our brains. Teachers need to encourage students to do their own thinking, ask questions, and work to figure out the result.

Teacher Notes

- Provide students the option to draw or write in order to meet the differentiation needs of learners.
- You may need more than two sets of the *WPH Accordion*. If more than two sets are needed, accordion-fold the other half-sheet of paper and tape it to the end of the first accordion. This gives you four sets of W-P-H sections.

Reverse, Reverse!
Strategy Overview

Reverse, Reverse! is meant to be a challenging strategy. When students are under stress, there will often be not only a chemical but a physical change in the brain. Students must learn the skills to deal with stress, but in a safe and friendly environment. In this strategy, students will practice the speed and fluency of facts, but they will do so under pressure—a pressure that you can adjust or increase, depending upon the topic and age level of your students.

Strategy Insight

Students sit or stand in a circle. They are given a topic and asked to brainstorm what they know about it. One student begins by sharing a fact about the topic. Going clockwise, the next student must quickly say another fact related to the one just stated. If the student pauses more than five seconds or states an incorrect fact, the student that just finished must state the next fact (reversing the direction of participation). One student sits out to judge the facts and make sure rules are followed. Continue until participation stalls. For example, a math activity using this strategy can include counting by threes. The first student says, "3;" the next student says, "6;" the next says, "9." If the following student says, "13," the rotation reverses to the previous student, who must say, "Reverse," and must also say the correct answer, "12." The responses are now going counterclockwise. An example of using this strategy in social studies can include the three branches of government. The first student might say, "Legislative branch;" the second says, "Makes the laws;" the third student says, "Congress;" and the fourth says, "Checks and balances." The judge (student sitting out) can halt the flow to ask how the response relates to a previously said fact. If justified, the round continues. *Reverse, Reverse!* continues until a predetermined amount of clock time or number of times around the circle has been met.

Teacher Notes

- It is important to set the stage for students to feel safe when using this strategy. You may wish to take out the reverse portion at first and work on just the speed. Add the extra layer of difficulty for novelty and time-pressured practice.
- For younger students, you may choose to not have the next student say, "Reverse," but instead state the correct fact.

How to Use This Book

Lesson Overview

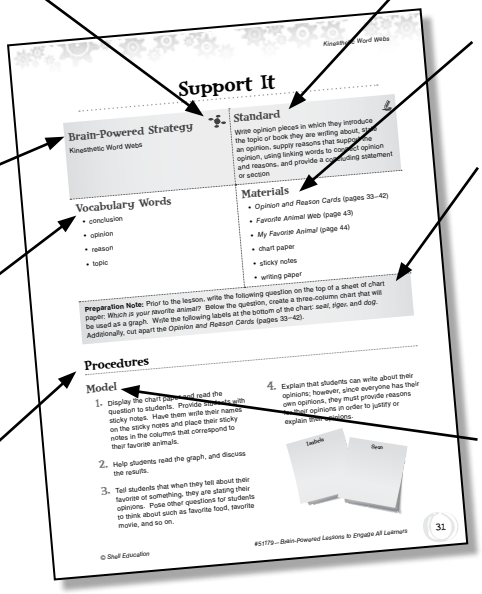
The following lesson components are in each lesson and establish the flow and success of the lessons.

Icons state the brain-powered strategy and one of the four content areas addressed in the book: language arts, mathematics, science, or social studies.

Each lesson revolves around one of the eight **brain-powered strategies** in this book. Be sure to review the description of each strategy found on pages 12–19.

Vocabulary that will be addressed in the lesson is called out in case extra support is needed.

The **procedures** provide step-by-step instructions on how to implement the lessons successfully.



Kinesthetic Word Webs

Support It

Brain-Powered Strategy
Kinesthetic Word Webs

Standard
Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, using linking words to connect opinion and reasons, and provide a concluding statement or section

Vocabulary Words
- conclusion
- opinion
- reason
- topic

Materials
- *Opinion and Reason Cards* (pages 33–42)
- *Favorite Animal Web* (page 43)
- *My Favorite Animal* (page 44)
- chart paper
- sticky notes
- writing paper

Preparation Note: Prior to the lesson, write the following question on the top of a sheet of chart paper: *Which is your favorite animal?* Below the question, create a three-column chart that will be used as a graph. Write the following labels at the bottom of the chart: *seal, tiger,* and *dog.* Additionally, cut apart the *Opinion and Reason Cards* (pages 33–42).

Procedures

Model

1. Display the chart prepared and read the question to students. Provide students with sticky notes. Have them write their names on the sticky notes and place their sticky notes in the columns that correspond to their favorite animals.
2. Help students read the graph, and discuss the results.
3. Tell students that when they tell about their favorite of something, they are stating their opinions. Pose other questions for students to think about such as favorite food, favorite movie, and so on.
4. Explain that students can write about their opinions; however, since everyone has their own opinions, they must provide reasons that support opinions in order to justify or explain their opinions.

Ladybug Swan

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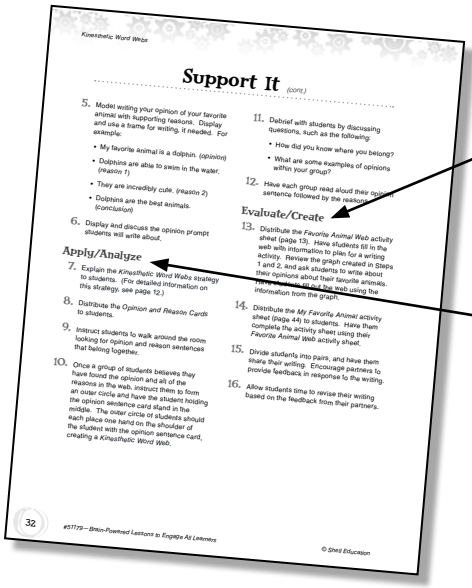
The **standard** indicates the objective for the lesson.

A **materials** list identifies the components of the lesson.

Many lessons contain a **preparation note** that indicates action needed prior to implementing the lessons. Be sure to review these notes to ensure a successful delivery of the lesson.

The **model** section of the lesson provides teachers the opportunity to model what is expected of students and what needs to be accomplished throughout the lesson.



Kinesthetic Word Webs

Support It (cont.)

5. Model writing your opinion of your favorite animal with supporting reasons. Display and use a frame for writing, if needed. For example:
   - My favorite animal is a dolphin. (*opinion*)
   - Dolphins are able to swim in the water. (*reason 1*)
   - They are incredibly cute. (*reason 2*)
   - Dolphins are the best animals. (*conclusion*)
6. Display and discuss the opinion prompt students will write about.

Apply/Analyze

7. Explain the *Kinesthetic Word Webs* strategy to students. (For detailed information on this strategy, see page 12.)
8. Distribute the *Opinion and Reason Cards* to students.
9. Instruct students to walk around the room looking for opinion and reason sentences that belong together.
10. Once a group of students believes they have found the opinion and all of the reasons in the web, instruct them to form an outer circle and have the student holding the opinion sentence card stand in the middle. The outer circle of students should each place one hand on the shoulder of the student with the opinion sentence card, creating a *Kinesthetic Word Web*.
11. Debrief with students by discussing questions, such as the following:
    - How did you know where you belong?
    - What are some examples of opinions within your group?
12. Have each group read aloud their opinion sentence followed by the reasons.

Evaluate/Create

13. Distribute the *Favorite Animal Web* activity sheet (page 13). Have students fill in the web with information to plan for a writing activity. Review the graph created in Steps 1 and 2, and ask students to write about their opinions about their favorite animals. Have students fill out the web using the information from the graph.
14. Distribute the *My Favorite Animal* activity sheet (page 44) to students. Have them complete the activity sheet using their *Favorite Animal Web* activity sheet.
15. Divide students into pairs, and have them share their writing. Encourage partners to provide feedback in response to the writing.
16. Allow students time to revise their writing based on the feedback from their partners.

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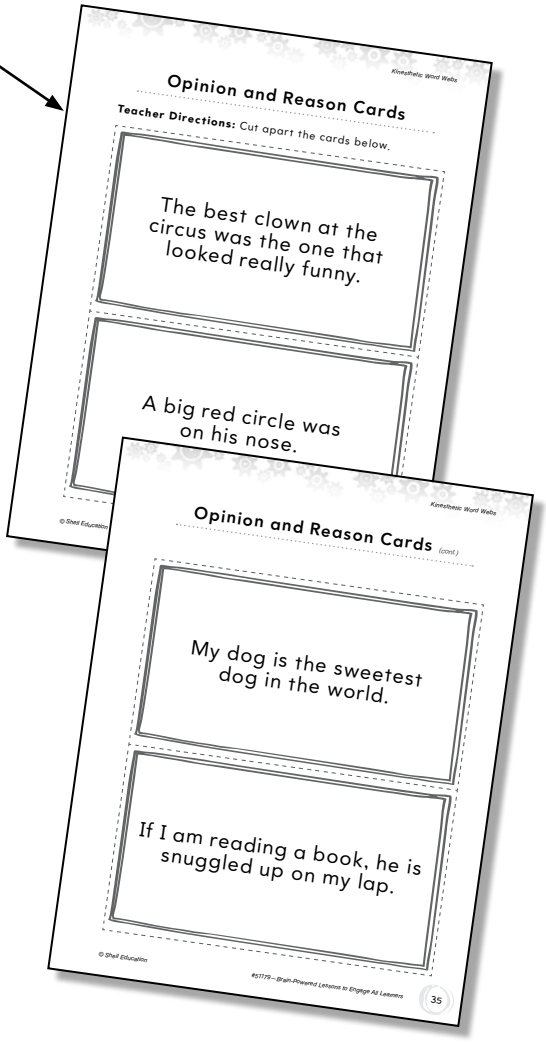
The **evaluate/create** section of the lesson provides students with the opportunity to think critically about the work of others and then to take ownership of their learning by designing the content in a way that makes sense to them.

The **apply/analyze** section of the lesson provides students with the opportunity to apply what they are learning as they analyze the content and work toward creating a personal connection.

How to Use This Book *(cont.)*

Lesson Overview *(cont.)*

Some lessons require **activity cards** to be used. You may wish to laminate the activity cards for added durability. Be sure to read the preparation note in each lesson to prepare the activity cards, when applicable.


Kinesthetic Word Webs

Opinion and Reason Cards

Teacher Directions: Cut apart the cards below.

The best clown at the circus was the one that looked really funny.

A big red circle was on his nose.

© Shell Education

Kinesthetic Word Webs

Opinion and Reason Cards *(cont.)*

My dog is the sweetest dog in the world.

If I am reading a book, he is snuggled up on my lap.

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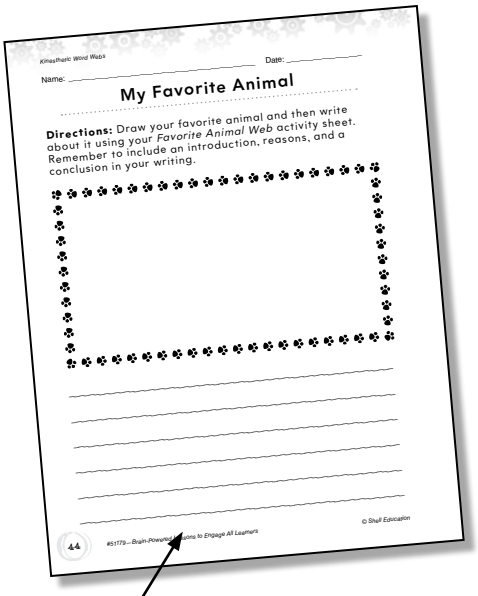
Kinesthetic Word Webs

Name: _____ Date: _____

My Favorite Animal

Directions: Draw your favorite animal and then write about it using your *Favorite Animal Web* activity sheet. Remember to include an introduction, reasons, and a conclusion in your writing.

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#51179—Brain-Powered Lessons to Engage All Learners

Activity sheets are included for lessons that require them. They are to be used either in groups, individually, or just by the teacher. If students are working in groups, encourage them to create a group name to label the activity sheet.

All of the activity sheets and additional teacher resources can be found on the **Digital Resource CD**.

How to Use This Book *(cont.)*

Implementing Higher-Order Thinking in the Lessons

What Is Higher-Order Thinking?

Higher-order thinking occurs on a different level than memorizing facts or telling something back to someone exactly the way it was told (Thomas and Thorne 2009). As educators, it is important to be aware of the level of thinking that students are asked to do. If teachers record the number of questions they ask students on a recall or restate level as well as how many were asked at a higher level, they may be surprised at the imbalance. How do they expect students to think at a higher level if they are not challenged with higher-order questions and problems? Students should be given questions and assignments that require higher-order thinking.

Higher-order thinking also involves critical thinking. If teachers want students to remember facts and think critically, they need to have them be engaged and working with the content at a higher level so that it creates understanding and depth. In addition, higher-order thinking and critical thinking are imperative to 21st century skills. Employers want workers who can problem-solve and work cooperatively to find multiple solutions. The lessons in this resource gradually place more ownership of the learning process in the hands of students as they simultaneously move through higher-order thinking.

Bloom's Taxonomy and Webb's Depth of Knowledge

Throughout the history of education, structures were created to guide teachers in ways to evoke higher-order thinking. Two of the more popular structures are Bloom's Taxonomy and Webb's Depth of Knowledge (DOK).

Benjamin Bloom developed Bloom's Taxonomy as a way to classify educational learning objectives in a hierarchy. In 2001, Lorin Anderson, a former student of Bloom's, worked with some teachers to revise Bloom's original taxonomy by changing the terminology into verbs and switching the top two levels so that *create* (synthesis) is at the top and *evaluate* (evaluation) is just below (Overbaugh and Schultz n.d.).

Norman Webb created Depth of Knowledge in 1997 in order to assist with aligning the depth and complexity of a standard with its assessment. This structure focuses on how the verb is used in the context of what is asked of the student (Webb 2005). DOK correlates with Backwards Planning (Wiggins and McTighe 2005) in that the standards are addressed first and then an assessment that targets the standards is developed or selected.

How to Use This Book *(cont.)*

It is important that teachers instruct students at cognitive levels that meet their needs while challenging them, as well. Whether students are below level, on level, or above level, teachers should use the tools necessary to help them succeed. Using Webb's DOK gives us the tools to look at the end result and tie complexity to the assessment. Bloom's Taxonomy helps to guide depth of assignments and questions. Where the two meet is with the word complexity. Complexity is rigor. Complexity is the changing of levels within Bloom's, and DOK is the amount of depth of thinking that must occur. We want rigor, and thus, we want complexity in our teachings.

Bloom's Taxonomy	Webb's Depth of Knowledge
Knowledge/Remembering The recall of specifics and universals, involving little more than bringing to mind the appropriate material.	**Recall** The recall of a fact, information, or procedure (e.g., What are three critical-skill cues for the overhand throw?).
Comprehension/Understanding The ability to process knowledge on a low level such that the knowledge can be reproduced or communicated without a verbatim repetition.	**Skill/Concept** The use of information, conceptual knowledge, procedures, two or more steps, etc.
Application/Applying The ability to use information in another familiar situation.	**Strategy Thinking** Requires reasoning, developing a plan or sequence of steps; has some complexity; more than one possible answer.
Analysis/Analyzing The ability to break information into parts to explore understandings and relationships.	**Extended Thinking** Requires an investigation as well as time to think and process multiple conditions of the problem or task.
Synthesis and Evaluation/Evaluating and Creating Putting together elements and parts to form a whole and then making value judgements about the method.	

Adapted from Wyoming School Health and Physical Education (2001)

Correlation to the Standards

Shell Education is committed to producing educational materials that are research and standards based. In this effort, we have correlated all of our products to the academic standards of all 50 states, the District of Columbia, the Department of Defense Dependents Schools, and all Canadian provinces.

How to Find Standards Correlations

To print a customized correlation report of this product for your state, visit our website at http://www.shelleducation.com and follow the on-screen directions. If you require assistance in printing correlation reports, please contact our Customer Service department at 1-877-777-3450.

Purpose and Intent of Standards

Legislation mandates that all states adopt academic standards that identify the skills students will learn in kindergarten through grade twelve. Many states also have standards for Pre–K. This same legislation sets requirements to ensure the standards are detailed and comprehensive.

Standards are designed to focus instruction and guide adoption of curricula. Standards are statements that describe the criteria necessary for students to meet specific academic goals. They define the knowledge, skills, and content students should acquire at each level. Standards are also used to develop standardized tests to evaluate students' academic progress. Teachers are required to demonstrate how their lessons meet state standards. State standards are used in the development of all of our products, so educators can be assured they meet the academic requirements of each state.

Common Core State Standards

Many lessons in this book are aligned to the Common Core State Standards (CCSS). The standards support the objectives presented throughout the lessons and are provided on the Digital Resource CD (filename: standards.pdf).

TESOL and WIDA Standards

The lessons in this book promote English language development for English language learners. The standards listed on the Digital Resource CD (filename: standards.pdf) support the language objectives presented throughout the lessons.

Standards Chart

Common Core State Standard	Lesson(s)
Language.2.1.e—Use adjectives and adverbs, and choose between them depending on what was modified	Describe It p. 132
Language.2.1.f—Produce, expand, and rearrange complete simple and compound sentences	Add Some Spice p. 60
Reading: Foundational Skills.2.3.d—Decode words with common prefixes and suffixes	Add Meaning p. 87
Reading: Literature.2.2—Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral	Folktale Fun p. 69
Reading: Literature.2.7—Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot	Where and When? p. 58
Reading: Literature.2.9—Compare and contrast two or more versions of the same story by different authors or from different cultures	Comparing Stories p. 124
Reading: Informational Text.2.1—Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text	Question Words p. 29
Writing.2.2—Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, using linking words to connect opinion and reasons, and provide a concluding statement or section	Support It p. 31
Writing.2.2—Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section	Inform Me p. 127
Writing.2.3—Write narratives in which they recount a well-elaborated event or short sequence of events, including details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure	Add More Detail p. 72

Standards Chart *(cont.)*

Common Core State Standard	Lesson(s)
Math.2.OA.2—Fluently add and subtract within 20 using mental strategies. By the end of Grade 2, know from memory all sums of two one-digit numbers	More Than One Way p. 149
Math.2.NBT.3—Read and write numbers to 1,000 using base-ten numerals, number names, and expanded form	Numbers Webs p. 45
Math.2.MD.1—Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes	Estimating Measurement p. 141
Math.2.MD.3—Estimate lengths of units of inches, feet, centimeters, and meters	Estimating Measurement p. 141
Math.2.MD.10—Draw a picture graph and a bar graph to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph	Graph It p. 78
Math.2.G.1—Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes	The Shape of Things p. 67

McREL Standard	Lesson(s)
Science 1.2—Knows that water can be a solid or a liquid and can be made to change from one form to the other, but the amount of water stays the same	Wonderful Water p. 135
Science 5.2—Knows that plants and animals have different features that help them live in different environments	Animal Features p. 129
Science 8.1—Knows that different objects are made up of many different materials and have many different observable properties	Observable Properties p. 152
Science 12.2—Knows that tools (e.g., thermometers, magnifiers, rulers, balances) can be used to gather information and extend the senses	Scientific Tools p. 104

Standards Chart *(cont.)*

McREL Standard	Lesson(s)
Science 12.3—Makes predictions based on given patterns	Predictions in Science p. 144
History 1.6—Knows ways in which people share family beliefs and values	Sharing Beliefs and Values p. 113
History 3.2—Knows ways in which early explorers and settlers adapted to, used, and changed the environment of the state or region	Early Settlers p. 146
History 4.2—Understands how individuals have worked to achieve the liberties and equality promised in the principles of American democracy and to improve the lives of people from many groups	Equality Workers p. 83
History 7.2—Knows the holidays and ceremonies of different societies	Celebrate! p. 155
Geography 4.2—Knows that places can be defined by their predominant human and physical characteristics	Geographic Features p. 137

TESOL and WIDA Standard	Lesson(s)
English language learners **communicate** for **social**, **intercultural**, and **instructional** purposes within the school setting	All lessons
English language learners **communicate** information, ideas, and concepts necessary for academic success in the area of **language arts**	All lessons

Content Area Correlations Chart

Content Area	Lessons
Reading	Question Words p. 29; Where and When? p. 58; Folktale Fun p. 69; Add Meaning p. 87; Comparing Stories p. 124
Writing	Support It p. 31; Add Some Spice p. 60; Add More Detail p. 72; Inform Me p. 127; Describe It p. 132
Math	Numbers Webs p. 45; The Shape of Things p. 67; Graph It p. 78; Estimating Measurement p. 141; More Than One Way p. 149
Social Studies	Equality Workers p. 83; Sharing Beliefs and Values p. 113; Geographic Features p. 137; Early Settlers p. 146; Celebrate! p. 155
Science	Scientific Tools p. 104; Animal Features p. 129; Wonderful Water p. 135; Predictions in Science p. 144; Observable Properties p. 152

Question Words

Brain-Powered Strategy

Kinesthetic Word Webs

Standard

Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text

Vocabulary Words

- informational
- key details

Materials

- index cards
- chart paper
- copies of whole or part of an informational text for students

Preparation Note: Prior to the lesson, select an informational text. Think of questions based on the text using: *who*, *what*, *where*, *when*, *why*, and *how*. Write the answers to the questions on index cards. (You do not need to write the questions. Students will do that as part of the activity.) Make as many sets of these cards as needed for the number of groups you will form. Additionally, make one index card with the title of the selected informational text for each group.

Procedures

Model

1. Read the selected informational text to students.
2. Discuss the text features that are in the text.
3. Explain to students that good readers ask and answer questions about the texts they read. Make a list on the sheet of chart paper of the 5*W*s and the *H* question words: *who*, *what*, *where*, *when*, *why*, and *how*.
4. Discuss with students what each of the question words means and what type of information the question is asking. For example, *where* questions ask about location, and *who* questions ask about people.
5. Practice asking and answering several questions based on the text (use different questions than the ones on the index cards created for the activity).

Apply/Analyze

6. Explain the *Kinesthetic Word Webs* strategy to students. (For detailed information on this strategy, see page 12.)
7. Randomly distribute the prepared index cards, one index card per student.

Question Words *(cont.)*

8. Ask students to try to determine which question word the answer on their index cards answer. Instruct students to walk around the room looking for answers that belong together, so that each group contains all of the questions about the text and the index card with the title of the text. (There should be six answer cards and one title card per group.)

9. Once a group of students believes they have found all of the index cards, instruct them to form an outer circle and have the student holding the title card stand in the middle. The outer circle of students should each place one hand on the shoulder of the student with the title card, creating a *Kinesthetic Word Web*.

10. Debrief with students by discussing questions, such as the following:

    - How did you know what question your card answered?
    - How did your group know if all of the questions were represented?

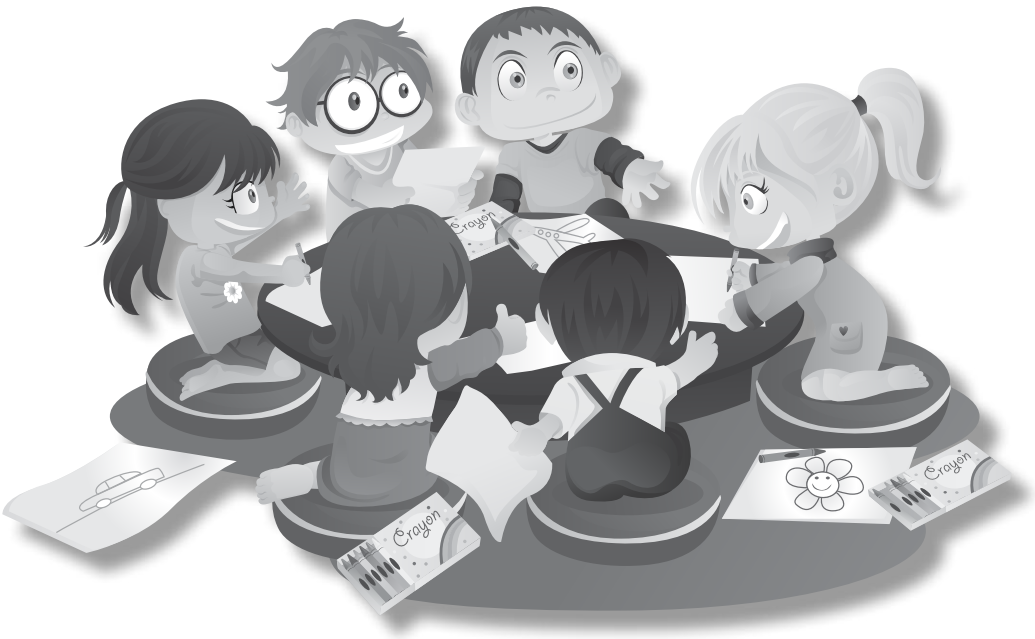
11. Have students work together in their web groups to write the questions that match the answers that are on their cards.

Evaluate/Create

12. Provide students with the text or a portion of the text, index cards, and one of the question words.

13. Have students read the text and determine questions that can be asked based on the question words they have been assigned. Then, have students write the answer to the questions on index cards. Swap cards and have students record multiple possibilities on the cards and whether they agree/disagree with the answer(s).

14. Make another *Kinesthetic Word Web* using the students' cards.



Support It

Brain-Powered Strategy

Kinesthetic Word Webs

Standard

Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, using linking words to connect opinion and reasons, and provide a concluding statement or section

Vocabulary Words

- conclusion
- opinion
- reason
- topic

Materials

- *Opinion and Reason Cards* (pages 33–42)
- *Favorite Animal Web* (page 43)
- *My Favorite Animal* (page 44)
- chart paper
- sticky notes

Preparation Note: Prior to the lesson, write the following question on the top of a sheet of chart paper: *Which is your favorite animal?* Below the question, create a three-column chart that will be used as a graph. Write the following labels at the bottom of the chart: *seal*, *tiger*, and *dog*. Additionally, cut apart the *Opinion and Reason Cards* (pages 33–42).

Procedures

Model

1. Display the chart paper and read the question to students. Provide students with sticky notes. Have them write their names on the sticky notes and place their sticky notes in the columns that correspond to their favorite animals.
2. Help students read the graph and discuss the results.
3. Tell students that when they tell about their favorite of something, they are stating their opinions. Pose other questions for students to think about such as favorite food, favorite movie, and so on.
4. Explain that students can write about their opinions; however, since everyone has his or her own opinions, he or she must provide reasons for his or her opinions in order to justify or explain their thinking.

Support It *(cont.)*

5. Model writing your opinion of your favorite animal with supporting reasons. Display and use a frame for writing, if needed. For example:
   - My favorite animal is a dolphin. (*opinion*)
   - Dolphins are able to swim in the water. (*reason 1*)
   - They are incredibly cute. (*reason 2*)
   - Dolphins are the best animals. (*conclusion*)
6. Display and discuss the opinion prompt students will write about.

Apply/Analyze

7. Explain the *Kinesthetic Word Webs* strategy to students. (For detailed information on this strategy, see page 12.)
8. Distribute the *Opinion and Reason Cards* to students.
9. Instruct students to walk around the room looking for opinion and reason sentences that belong together.
10. Once a group of students believes they have found the opinion and all of the reasons in the web, instruct them to form an outer circle and have the student holding the opinion sentence card stand in the middle. The outer circle of students should each place one hand on the shoulder of the student with the opinion sentence card, creating a *Kinesthetic Word Web*.
11. Debrief with students by discussing questions, such as the following:
    - How did you know where you belong?
    - What are some examples of opinions within your group?
12. Have each group read aloud its opinion sentence followed by the reasons.

Evaluate/Create

13. Distribute the *Favorite Animal Web* activity sheet (page 43). Have students fill in the web with information to plan for a writing activity. Review the graph created in Steps 1 and 2 and ask students to write about their opinions about their favorite animals. Have students fill out the web using the information from the graph.
14. Distribute the *My Favorite Animal* activity sheet (page 44) to students. Have them complete the activity sheet using their *Favorite Animal Web* activity sheet.
15. Divide students into pairs and have them share their writing. Encourage partners to provide feedback in response to the writing.
16. Allow students time to revise their writing based on the feedback from their partners.

Opinion and Reason Cards

Teacher Directions: Cut apart the cards below.

The best clown at the circus was the one that looked really funny.

A big red circle was on his nose.

Opinion and Reason Cards *(cont.)*

He had an orange wig on his head.

He wore shoes that were huge on his feet.

Opinion and Reason Cards *(cont.)*

My dog is the sweetest dog in the world.

If I am reading a book, he is snuggled up on my lap.

Opinion and Reason Cards *(cont.)*

He runs to the door to greet me when I get home.

He drops his toys at my feet to show me he wants to play.

Opinion and Reason Cards *(cont.)*

The game was the best one I have ever seen.

At one point, the score was tied three to three.

Opinion and Reason Cards *(cont.)*

There were five home runs during the game.

The teams took turns taking the lead.

Opinion and Reason Cards *(cont.)*

My grandma makes the best cookies.

There are twice as many chocolate chips in each one as when my mom bakes them.

Opinion and Reason Cards *(cont.)*

She serves them warm, right out of the oven.

Each one is the size of a small plate.

Opinion and Reason Cards *(cont.)*

Summer is one of my favorite seasons.

There is nothing like enjoying the warm weather.

Opinion and Reason Cards *(cont.)*

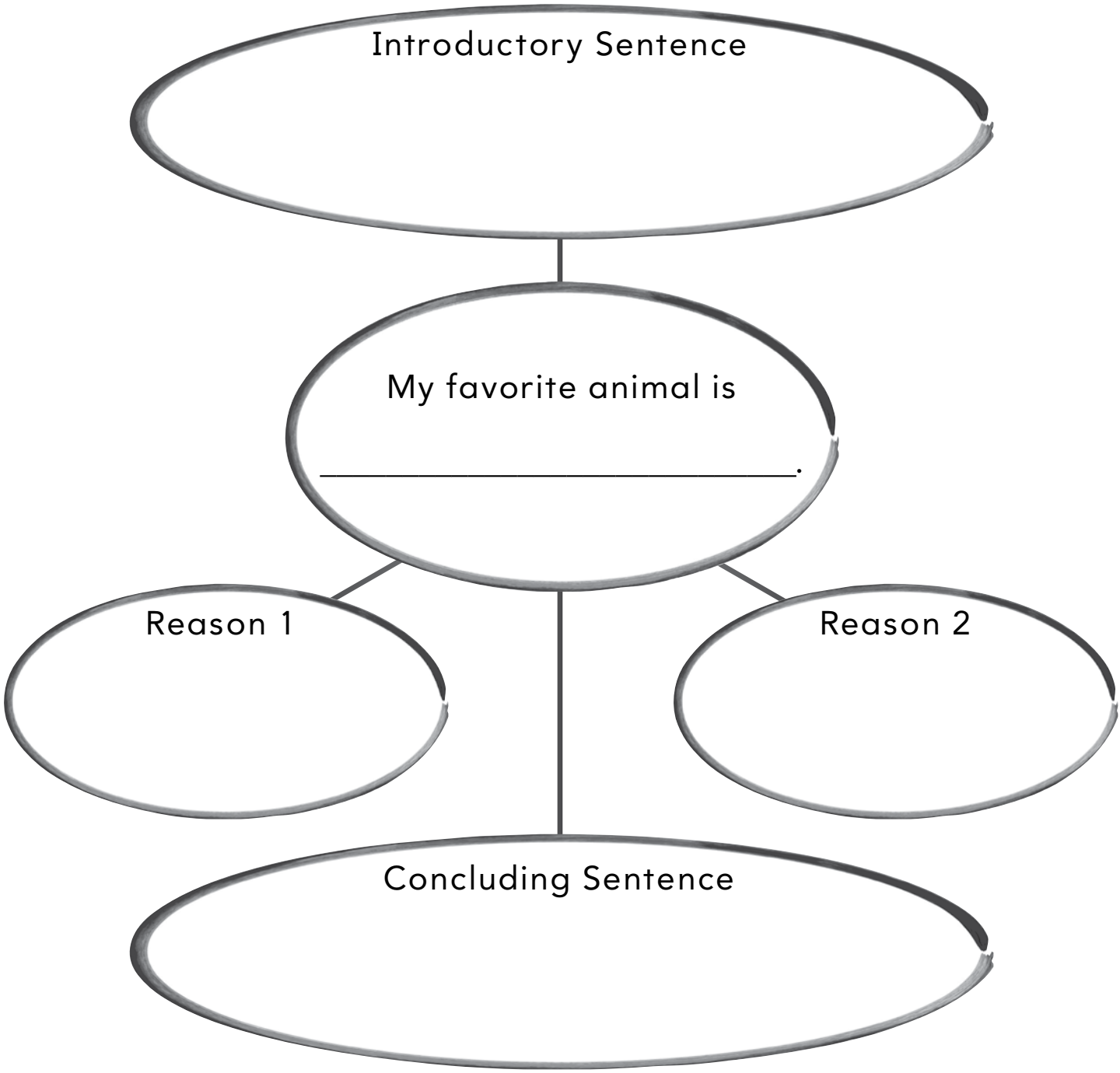
To cool off, I can go swimming.

I better make sure to wear sunscreen during the hot days.

Name: _____ Date: _____

Favorite Animal Web

Directions: Think about your favorite animal. Write its name in the middle. Then, fill in the surrounding ovals with the appropriate information to plan for your writing.



Name: _____ Date: _____

My Favorite Animal

Directions: Draw your favorite animal and then write about it using your *Favorite Animal Web* activity sheet. Remember to include an introductory sentence, at least one reason, and a concluding sentence in your writing.

_____

_____

_____

_____

_____

_____

_____

Numbers Webs

Brain-Powered Strategy

Kinesthetic Word Webs

Standard

Read and write numbers to 1,000 using base-ten numerals, number names, and expanded form

Vocabulary Words

- base-ten
- expanded form
- represent

Materials

- *Number Cards* (pages 47–56)
- *Represent My Number* (page 57)
- chart paper

Preparation Note: Prior to the lesson, cut apart the *Number Cards* (pages 47–56).

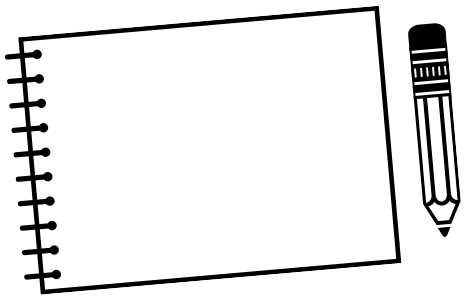
Procedures

Model

1. Write your name on the board.
2. Explain to students that there are many ways to name you. Record other ways you can be represented, such as Mrs. Keller, Jamie Keller, Auntie Jamie, Mom, and wife.
3. Tell students that although these are different ways your name can be represented, they all refer to the same person.
4. Write the number 253 on a sheet of chart paper. Read the number to students.
5. Explain to students that there are many different ways to represent 253.
6. Model and explain different ways to represent 253 including number name (two hundred fifty-three), expanded form (200 + 50 + 3), 2 hundreds, 5 tens, and 3 ones, tally marks, 255 – 2, and 200 + 53.
7. Ask students to contribute any other ways they can think of to represent the number. Record student responses on the chart paper.

Apply/Analyze

8. Explain the *Kinesthetic Word Webs* strategy to students. (For detailed information on this strategy, see page 12.)
9. Distribute the *Number Cards* to students.
10. Instruct students to walk around the room looking for different ways to represent the same number.



Numbers Webs *(cont.)*

11. Once a group of students believes they have found the number and all of the ways to represent that number, instruct them to form an outer circle and have the student holding the number card stand in the middle. The outer circle of students should each place one hand on the shoulder of the student with the number card, creating a *Kinesthetic Word Web*.

12. Debrief with students by discussing questions, such as the following:
    - How did you know where you belong?
    - What were some ways your selected number was represented?

Evaluate/Create

13. Put students into pairs. Distribute the *Represent My Number* activity sheet (page 57) to each student.

14. Have each student choose a number from 101–999 and place it in the first row on the activity sheet. Then, have them write two examples of how the number can be represented and one non-example. Have students give their papers to their partners to see if they can pick out the non-example.

15. Repeat Step 14 with different numbers.

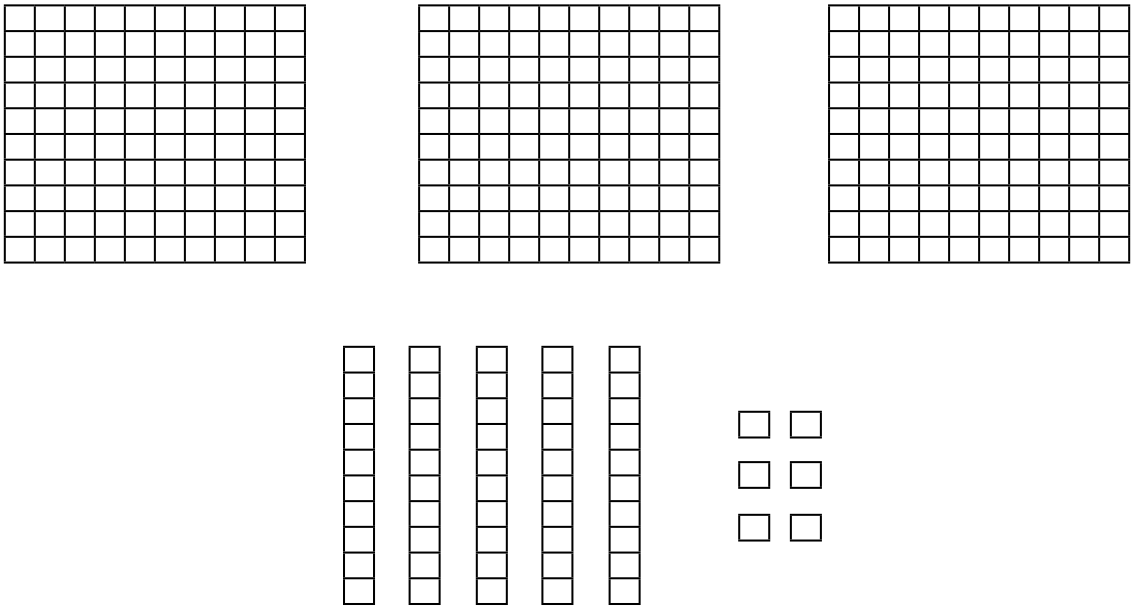
Number Cards

Teacher Directions: Cut apart the cards below.

356

300 + 50 + 6

Number Cards *(cont.)*



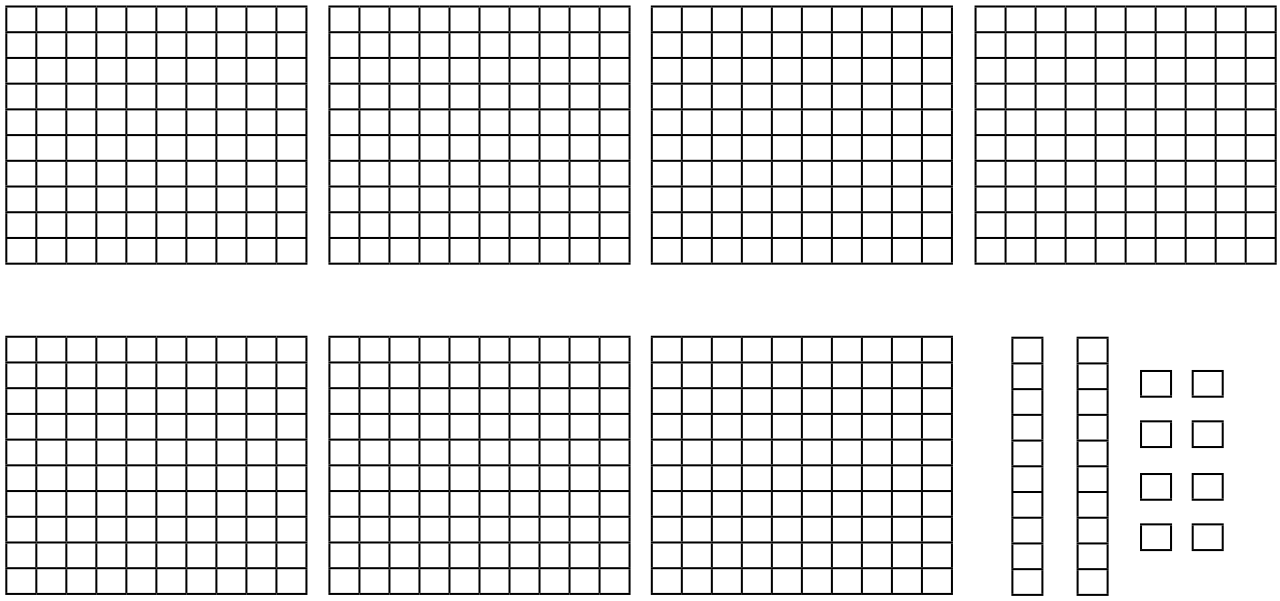
three hundred fifty–six

Number Cards *(cont.)*

728

700 + 20 + 8

Number Cards *(cont.)*



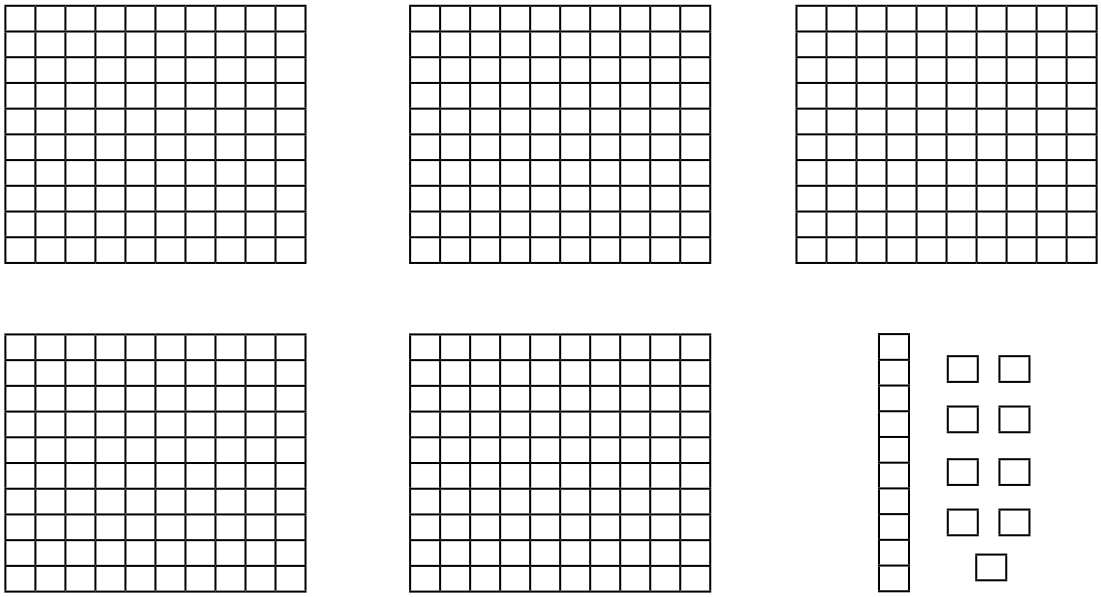
seven hundred twenty–eight

Number Cards *(cont.)*

519

500 + 10 + 9

Number Cards *(cont.)*



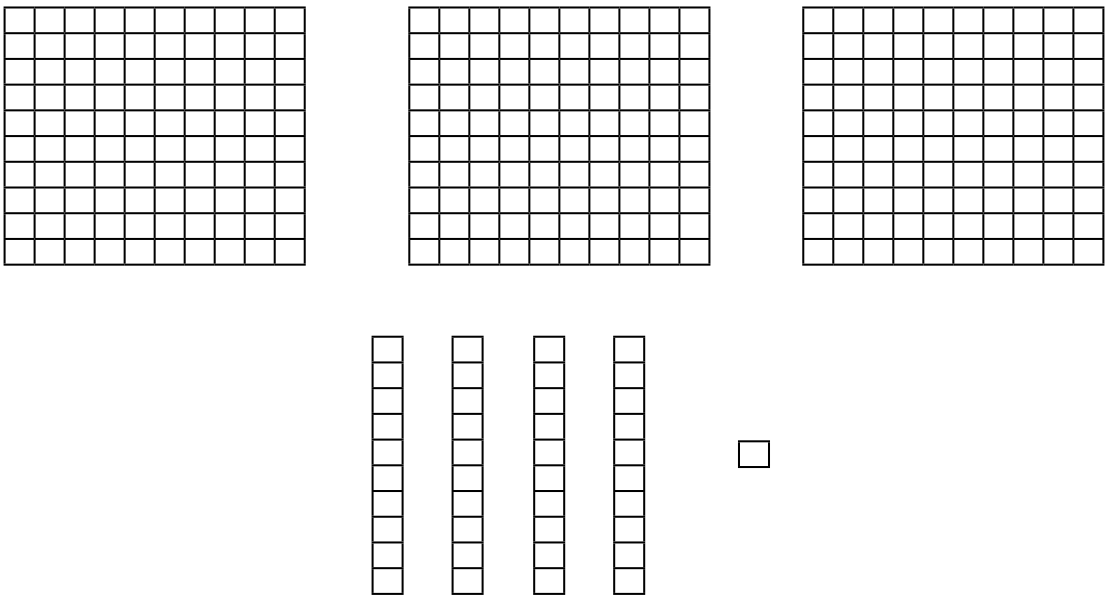
five hundred nineteen

Number Cards *(cont.)*

341

300 + 40 + 1

Number Cards *(cont.)*



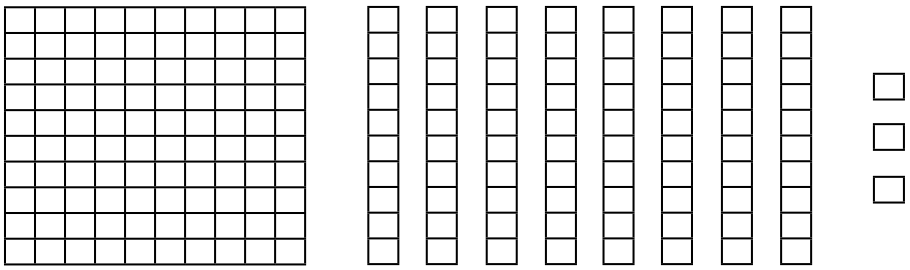
three hundred forty–one

Number Cards *(cont.)*

183

100 + 80 + 3

Number Cards *(cont.)*



one hundred eighty–three

Name: _____ Date: _____

Represent My Number

Directions: Write numbers between 101 and 999. Then, write two examples of each number and one non-example. Give your paper to a partner to see if he or she can pick out the non-examples.

Number 1:

1. _____
2. _____
3. _____

Number 2:

1. _____
2. _____
3. _____

Where and When?

Brain-Powered Strategy

E-L-A-B-O-R-A-T-E

Standard

Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot

Vocabulary Words

- elaborate
- plot
- setting

Materials

- story students are already familiar with
- chart paper
- writing paper
- new story

Preparation Note: Prior to the lesson, determine which story element students will focus on as they do the activity (e.g., characters, setting, plot). This lesson is written to focus on setting, but can easily be adapted for other story elements.

Procedures

Model

1. Draw a clock and an outline of a house on the board. Ask students to name what these two images represent. Guide students to the idea that the clock represents time, and the house represents location.
2. Ask each student to turn to a partner. Have one partner describe the building he or she is in right now (e.g., at their desks, in a classroom, at a school). Have the other partner describe the time (e.g., daytime, 2:00, school time).
3. Explain to students that the place or the time a story happens is the setting. Discuss some settings from stories students are familiar with.
4. Tell students that the setting of a story is usually described in a story.
5. Display a story students are already familiar with. Read the first several pages of the text. Ask students to listen to hear if the setting is described in the text. Record any descriptions of the setting on a sheet of chart paper.
6. Explain that many more clues to a setting can often be found in the illustrations. Ask students to describe the setting based on the illustrations. Record students' observations on the chart paper. (Record all observations, even if they are observations that were also directly stated in the text.)

Where and When? *(cont.)*

7. Compare the setting description with the illustration observations. Ask students in which case they learn more about the story. Discuss why.

Apply/Analyze

8. Explain the *E-L-A-B-O-R-A-T-E* strategy to students. (For detailed information on this strategy, see page 13.)

9. Divide students into groups of three, and provide each group with writing paper.

10. Display the cover of a new story. Read the title, author's name, and illustrator's name to students.

11. Read the first several pages of the book to students and display the illustrations.

12. Instruct students to describe the setting of the story by using the text that was read and the illustrations. The first student should begin by telling the setting that was in the text. For example: *The setting is in the woods.* As a class, brainstorm how a movement can be created to depict the length of the sentence. For example, students can kneel down and slowly grow taller to demonstrate the length of the sentence.

13. The next student elaborates on the setting by using either more text descriptions or by using the illustrations to add to the description. For example: *The setting is deep in the woods*. Again, students kneel down and slowly rise up. They should rise higher than before since the added details in the sentence make it longer.

Evaluate/Create

14. Have students continue to elaborate on the setting until they have exhausted the text description and illustration depictions of the setting. With each revised sentence, encourage students to think about kneeling down and rising up to understand how the length of the sentences are increasing.

15. Write the sentence(s) from the text that describes the setting on the board.

16. Have students work with their groups to rewrite a new sentence based on their discussion during the activity.

17. Ask students to discuss with their groups if the new sentence is better than the one in the text or if they like having to infer some of the details of the setting from the illustrations.

18. Have each group share its conclusions. Discuss as a whole class if there was a consensus about which is the best way to describe/depict the setting in a story.

Add Some Spice

Brain-Powered Strategy

E-L-A-B-O-R-A-T-E

Standard

Produce, expand, and rearrange complete simple and compound sentences

Vocabulary Words

- adjectives
- details
- elaborate

Materials

- *Add Some Spice Picture Cards* (pages 62–65)
- *What Can You Add?* (page 66)
- storybook with vivid language

Preparation Note: Prior to the lesson, cut apart the *Add Some Spice Picture Cards* (pages 62–65).

Procedures

Model

1. Read aloud the selected story with vivid language and interesting sentences.
2. Stop while reading the story and write one of the sentences from the book on the board. Discuss with students which words in the sentence can be removed without taking away the meaning. Discuss how having the words in the sentence adds detail and interest to the meaning of the sentence.
3. Tell students that simple sentences do their job of telling what happened. Display the *Add Some Spice Picture Card* of the dog. Write the following sentence on the board: *The dog eats.*
4. Explain that adding details when writing is like adding spice when cooking—it makes the sentence more interesting, and it explains more.
5. Show students how to elaborate by adding details in order to expand the sentence and make it more interesting. Expand the sentence by adding one detail. Write the new sentence below the first sentence. For example: *The hungry dog eats.* Read the revised sentence to students and have them demonstrate with their hands how the sentence has been elaborated (students should move their palms further apart after hearing each word in the sentence being read).

Add Some Spice *(cont.)*

6. Continue elaborating on the sentence by adding one detail at a time. Write the expanded sentences underneath each other so students can compare what has been recently added, and they can continue to gesture the elaboration with their hands. The following are some elaborated sentence examples:
   - The dog eats.
   - The hungry dog eats.
   - The hungry dog eats his dinner.
   - The hungry dog eats his delicious dinner.
7. Discuss with students what happens when a sentence has too many details. Model this for students by expanding the sentence to include too many details. Discuss with students why this is ineffective writing.

Apply/Analyze

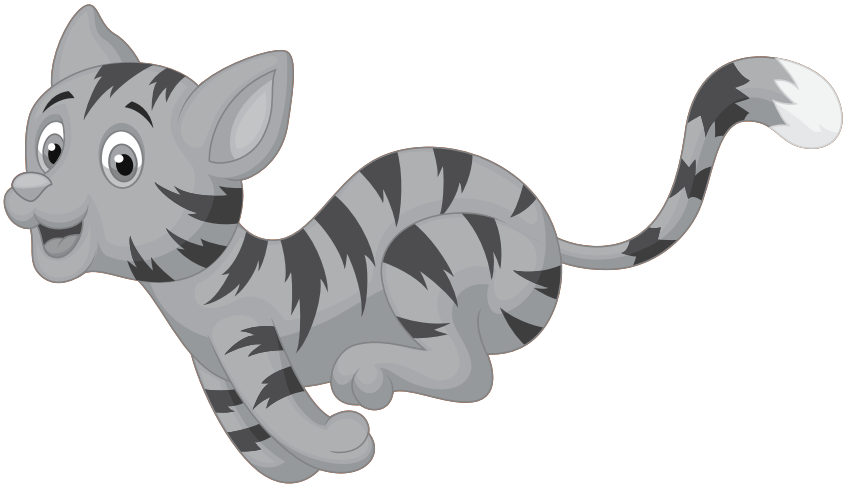
8. Explain the *E-L-A-B-O-R-A-T-E* strategy to students. (For detailed information on this strategy, see page 13.)
9. Divide students into groups of three. Provide each group with an *Add Some Spice Picture Card*.
10. Have one student in the group create a simple sentence with a noun and verb to describe the picture.
11. Have the next student elaborate on the original sentence by adding a detail.
12. Continue to the third student in the group. Have this student elaborate on the second sentence created by adding one more detail.
13. Rotate picture cards and have students practice with other picture cards.

Evaluate/Create

14. Distribute the *What Can You Add?* activity sheet (page 66) to students. Have them draw a simple picture and write a simple sentence about the picture.
15. Place students into pairs. Have partners switch activity sheets. Allow partners to add some detail to their partners' drawings. Then, instruct them to write a more detailed sentence to describe the new drawing.
16. Have partners return their activity sheets to one another. Have students look over the new details to the drawings and the sentences. Allow time for partners to discuss the added details.

Add Some Spice Picture Cards

Teacher Directions: Cut apart the cards below.



Add Some Spice Picture Cards *(cont.)*

Add Some Spice Picture Cards *(cont.)*

Add Some Spice Picture Cards *(cont.)*

Name: _____ Date: _____

What Can You Add?

Directions: Make a simple sketch. Then, write a simple sentence to describe your sketch. Switch your paper with a partner to add details to the sketch and the sentence.

Simple Sentence

_____

_____

_____

Detailed Sentence

_____

_____

_____

The Shape of Things

Brain-Powered Strategy

E-L-A-B-O-R-A-T-E

Standards

Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces

Identify triangles, quadrilaterals, pentagons, hexagons, and cubes

Vocabulary Words

- angles
- attributes
- corners
- faces
- sides

Materials

- square object (*optional*)
- writing paper

Procedures

Model

1. Draw a square on the board or provide a visual of a real object. Write the following sentence on the board: *This is a shape.*

2. Explain to students that more detail can be added to the sentence by elaborating on what type of shape it is. Change the sentence to read: *This shape is a square.*

3. Explain to students that by identifying the attributes of a shape, the sentence will be more accurately described.

4. Trace over the sides of the square as you review with students that the straight lines of the shape are called the *sides*. Create a motion such as having hands together and moving them apart as a sentence is read to indicate the length of the sentence. Write a new sentence on the board just beneath the previous one. For example: *This is a square with four sides.* Review with students the first sentence and the new sentence. Expand your hands to show how as the sentence becomes longer, it also becomes more detailed.

The Shape of Things *(cont.)*

5. Remind students that a square has sides that are equal, so that is a way to be more specific about the types of sides. Again add to the sentence by writing: *This is a square with four equal sides*. Review the previous sentences and compare them to the new sentence. Have students move their hands apart with you and remind them that this sentence is longer because of the added details.

Apply/Analyze

6. Circle the corners of the shape as you review the word and definition for *vertices*. Add to the original sentence by writing: *This is a square with four equal sides and four vertices*. Once again, compare the previous sentences to the new sentence and have students move their hands apart to notice how long the sentence is becoming.

7. Repeat Steps 3–6 by modeling any other two- or three-dimensional shapes and any attributes you want to review.

8. Tell students that they will be doing a strategy called *E-L-A-B-O-R-A-T-E*. (For detailed information on this strategy, see page 13.)

9. Divide students into groups of three. Draw a shape such as a pentagon on the board and write a simple sentence such as: *This is a shape.*

10. Instruct students to help each other add more details and elaborate on the sentence in order to better describe the shape on the board. For example: *This is a shape with five equal sides and five angles.* Students can work together in a variety of ways in order to elaborate and create a movement that depicts their revised sentences, such as tracing a shape in the air over and over as they read the sentences aloud. Students can go around the group. and each person can elaborate by adding one attribute of the shape, or students can collectively name the attributes and then work together to form them into a sentence.

11. Distribute writing paper to students and ask them to record the final sentence they create.

12. Continue the procedure using other shapes.

Evaluate/Create

13. Have students review the sentences they created about the shapes. Ask students to identify which attribute was the most useful in accurately describing the shapes.

14. Have students choose a shape and read the sentence they wrote about the shape, eliminating the attribute they identified as the most useful. Ask students to discuss how it changes the specificity of the sentence by having the attribute used in the sentence and by eliminating it.

15. Allow groups to share their sentences. Identify as a class if there was consensus about which attribute was the most useful or if it varied by group or by shape.

Folktale Fun

Brain-Powered Strategy

Response Cards

Standard

Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral

Vocabulary Words

- folktale
- lesson
- message
- moral

Materials

- *My Reasoning* (page 71)
- chart paper
- variety of folktales
- index cards
- clothespins

Preparation Note: Prior to the lesson, select folktales to read to students. Prepare index cards by writing the names of the folktales you plan to read to the class. The name of each folktale should be written along each side of the index card.

Procedures

Model

1. Explain to students that folktales are short stories that have fantasy characters in them. Tell students that they may know some folktales as fairy tales.
2. Have students name as many folktales or fairy tales as they know. Record their responses on a sheet of chart paper.
3. Tell students that countries from all over the world have folktales and that some of the stories even have elements that are the same.
4. Read various folktale books and complete any desired activities related to the books. This part of the lesson may take place over several days or weeks and needs to be completed before attempting the *Response Cards* strategy. This strategy is particularly fun if students have read similar stories from a variety of cultures, for example *Cinderella*, *Mufaro's Beautiful Daughters*, *The Egyptian Cinderella*, and *Yeh-Shen: A Cinderella Story from China*, although it can also be completed with any variety of folktales.
5. Discuss with students the central message and moral behind each folktale. Encourage students to share what lessons can be learned from each one.

Folktale Fun *(cont.)*

Apply/Analyze

6. Tell students that they will be doing a strategy called *Response Cards*. (For detailed information on this strategy, see page 14.)

7. Distribute the prepared response cards and a clothespin to each student.

8. Ask questions about the folktales that can be answered with one of the responses on the response card. For example: *Which story had a character named _____?* Alter the questions based on the information read in the folktales.

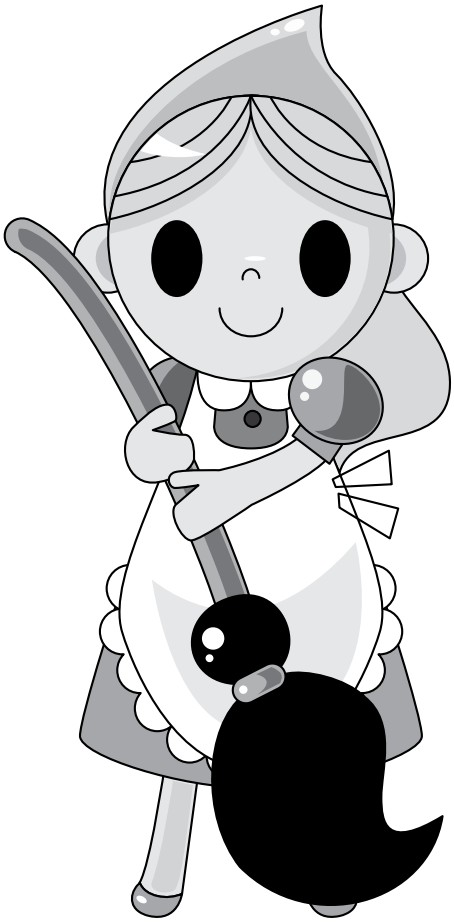
9. Have students move their clothespins to the side of the response card that represents their answers. Tell students to discuss with partners their answers and explain why they chose their answers. This is an opportunity to learn what others think, which could be different from how they think even if they share the same answers.

Evaluate/Create

10. Distribute the *My Reasoning* activity sheet (page 71) to students.

11. Ask students to decide which story or version of the story was their favorite and least favorite folktale. Have them answer the sentence frames with one or two sentences to explain why they chose a story as their favorite and one or two sentences to explain why they did not like a particular folktale.

12. Have students share their reasoning with partners to compare and contrast their ideas.



Name: _____ Date: _____

My Reasoning

Directions: Complete the sentences below. Then, share your responses with a partner.

1. My favorite folktale is _____

because _____

_____

_____

_____

_____

_____

2. My least favorite folktale is _____

because _____

_____

_____

_____

_____

_____

_____

Add More Detail

Brain-Powered Strategy

Response Cards

Standard

Write narratives in which they recount a well-elaborated event or short sequence of events, including details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure

Vocabulary Words

- closure
- narrative
- sequence
- temporal words

Materials

- *Events in My Life* (pages 74–77)
- familiar story (e.g., *Goldilocks and the Three Bears*)
- index cards
- clothespins
- crayons or colored pencils

Preparation Note: Prior to the lesson, determine a shared experience the class will have together. Identify a sequence of four events that will happen during that shared experience. Prepare index cards by writing a short sentence or phrase about the four events. The name of each event should be written along each side of the index card.

Procedures

Model

1. Draw four (or more if needed for the particular story) rectangles in a horizontal line on the board. Tell students you will reread them a familiar story. They need to listen for four main events that will help retell the story.
2. Read the story to students.
3. Return to the sequencing map on the board. Guide students to identify the four main events from the story.
4. Tell students they will write narratives today. Explain that their narratives will have four main events but will have lots of details to help make their writing more interesting.
5. Involve students in a simple or short experience that can be shared by all (e.g., take a quick trip to the cafeteria to see what is for lunch today, demonstrate how to make a peanut butter and jelly sandwich, or conduct a simple science experiment).
6. Draw four rectangles in a horizontal line on the board. Explain to students that they must identify a sequence of four key events that happened during their shared experience. Guide students to identify simple sentences or phrases that can be written in the boxes to show the sequence of events.

Add More Detail *(cont.)*

Apply/Analyze

7. Tell students that they will be doing a strategy called *Response Cards*. (For detailed information on this strategy, see page 14.)

8. Provide students with the prepared response cards and a clothespin.

9. Explain to students that you will help them recall specific details about the four events as they do the activity. Name a detail that relates to one of the sequenced events listed on the students' cards. For example, "We smelled a wonderful aroma coming from the kitchen." Alter the details based on the shared event. The idea here is to help feed students details about the experience that can be used in their writing. Students must identify which event those details are related to.

10. Have students move their clothespins to the part of the response card that represents the key event in which detail was experienced.

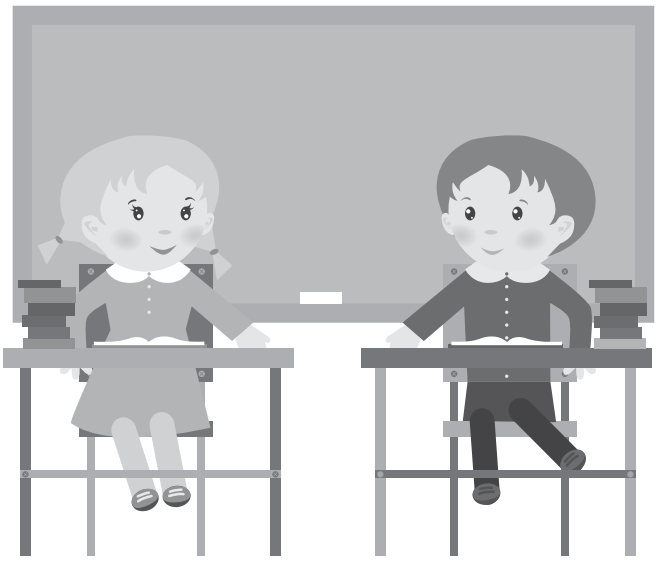
11. Have students elaborate with a partner other details they remember about the detail you mentioned as part of the activity.

Evaluate/Create

12. Distribute the *Events in My Life* activity sheet (pages 74–77) to students. Have students write their names on the cover and decorate it. Have students think about three events in their lives. Explain that they will need to be very detailed about the events they choose.

13. Have students complete the three events pages of their books with the three chosen events. Remind them to include supporting details to help describe each event.

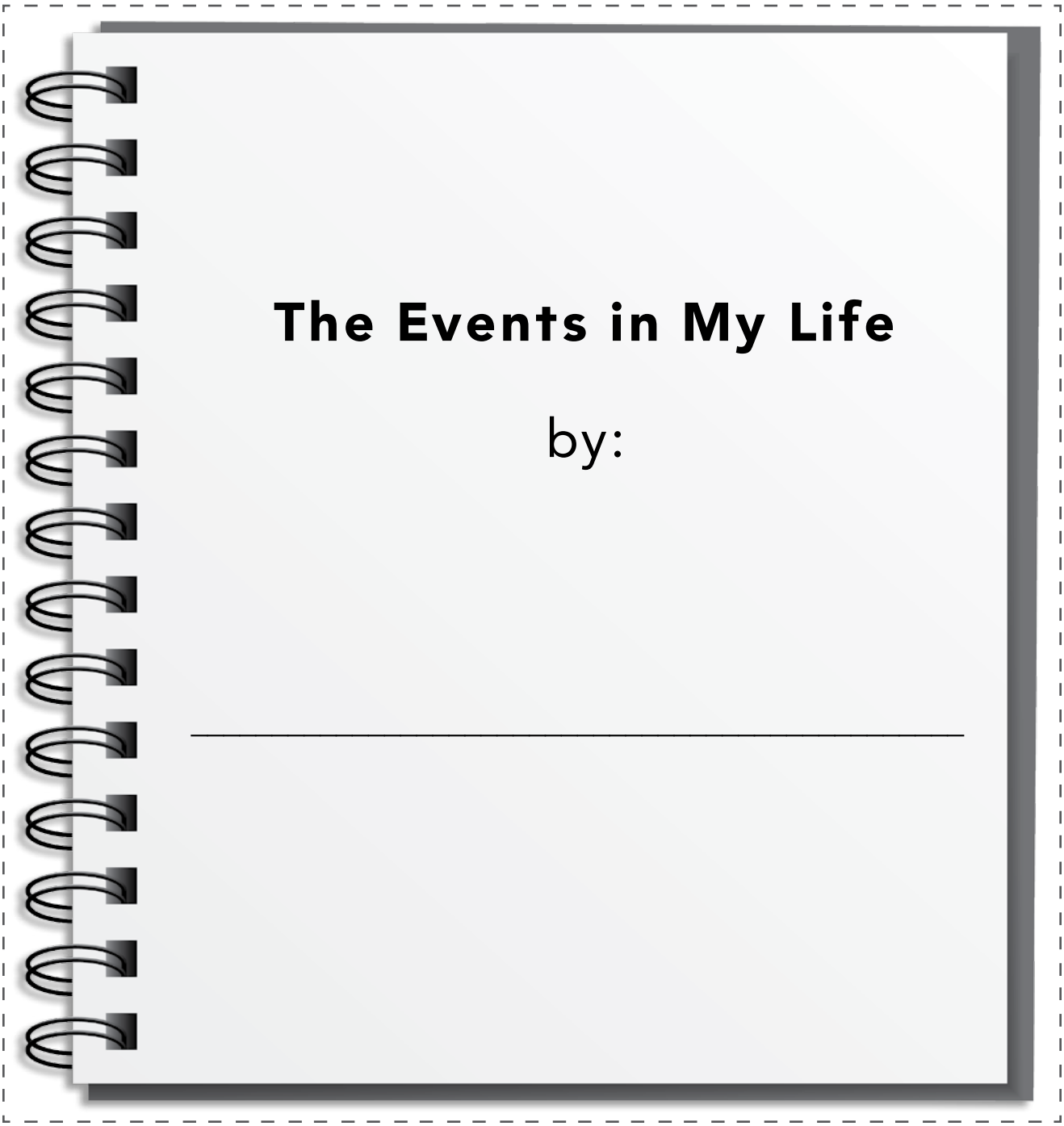
14. Have students staple the pages of their books together. Or you may wish to collect each student's book and make a classroom book. Have students read their books to partners. Instruct the partners to ask questions that require the "author" to provide more details about his or her events.



Name: _____ Date: _____

Events in My Life

Directions: Write your name. Then, decorate the cover.



Name: _____ Date: _____

Events in My Life *(cont.)*

Directions: Think about three big events in your life. Draw pictures of them. Then, write sentences to describe the events. Be sure to include a lot of details.

Event 1: _____

_____

_____

_____

_____

_____

Name: _____ Date: _____

Events in My Life *(cont.)*

Event 2: _____

_____

_____

_____

_____

_____

Name: _____ Date: _____

Events in My Life *(cont.)*

Event 3: _____

_____

_____

_____

_____

_____

Graph It

Brain-Powered Strategy

Response Cards

Standard

Draw a picture graph and a bar graph to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph

Vocabulary Words

- fewest
- graph
- how many more than
- most
- represent

Materials

- *Favorite Sports Graph* (page 80)
- *Graph Response Cards 1* (page 81)
- *Graph Response Cards 2* (page 82)
- chart paper
- clothespins
- writing paper

Preparation Note: Prior to the lesson, create a bar graph template on a sheet of chart paper. The template should provide three columns and as many rows as needed for creating a bar graph with the class size you have. Additionally, cut apart the *Graph Response Cards* (pages 81–82). You may wish to laminate the cards for durability.

Procedures

Model

1. Display the graph to students. Tell students that they will help turn the graph template into a bar graph.
2. Ask students the following question: *What is your favorite food?* Provide the following choices: *spaghetti*, *tacos*, or *pizza*.
3. Allow each student to color a box to represent his or her favorite food.
4. Demonstrate how to read the graph by counting out loud how many students chose each food.
5. Discuss the results of the graph by asking questions such as:
   - Which food was chosen by the most number of students?
   - Which food was chosen by the fewest number of students?
   - Were any foods chosen by the same number of students?
   - How many more _____ than _____?
   - Which food was chosen by _____ students?

Graph It *(cont.)*

Apply/Analyze

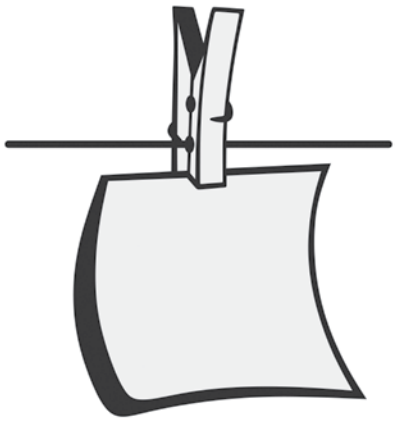
6. Tell students that they will be doing a strategy called *Response Cards*. (For detailed information on this strategy, see page 14.)

7. Distribute a *Graph Response Card 1*, a *Graph Response Card 2*, and a clothespin to each student. Then, display the *Favorite Sports Graph* (page 80).

8. Ask questions about the graph that can be answered with one of the responses on the *Graph Response Cards*. For example:

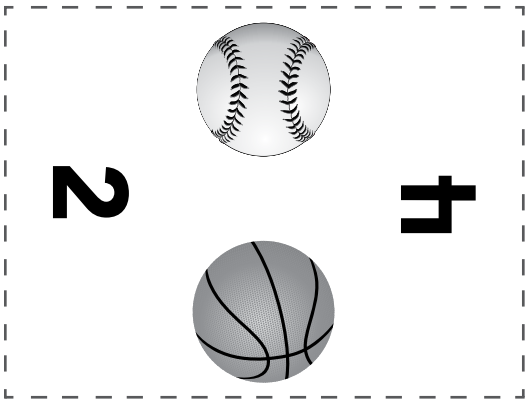
   - Which sport had four people choose it as the favorite?
   - How many people chose soccer as their favorite sport?
   - How many people chose football?

9. Have students move their clothespins to the side of the response card that represents their answers. Ask students to discuss their answers with partners, and explain why they chose their answers, even if they chose the same one. This is an opportunity to learn what others think, which could be different from how they think.



Evaluate/Create

10. Have students turn their response cards over. Give them directions to make their response cards look like the following:



11. Distribute writing paper to students. Ask students to work in pairs to write at least one question that can be answered with the newly-created response cards.

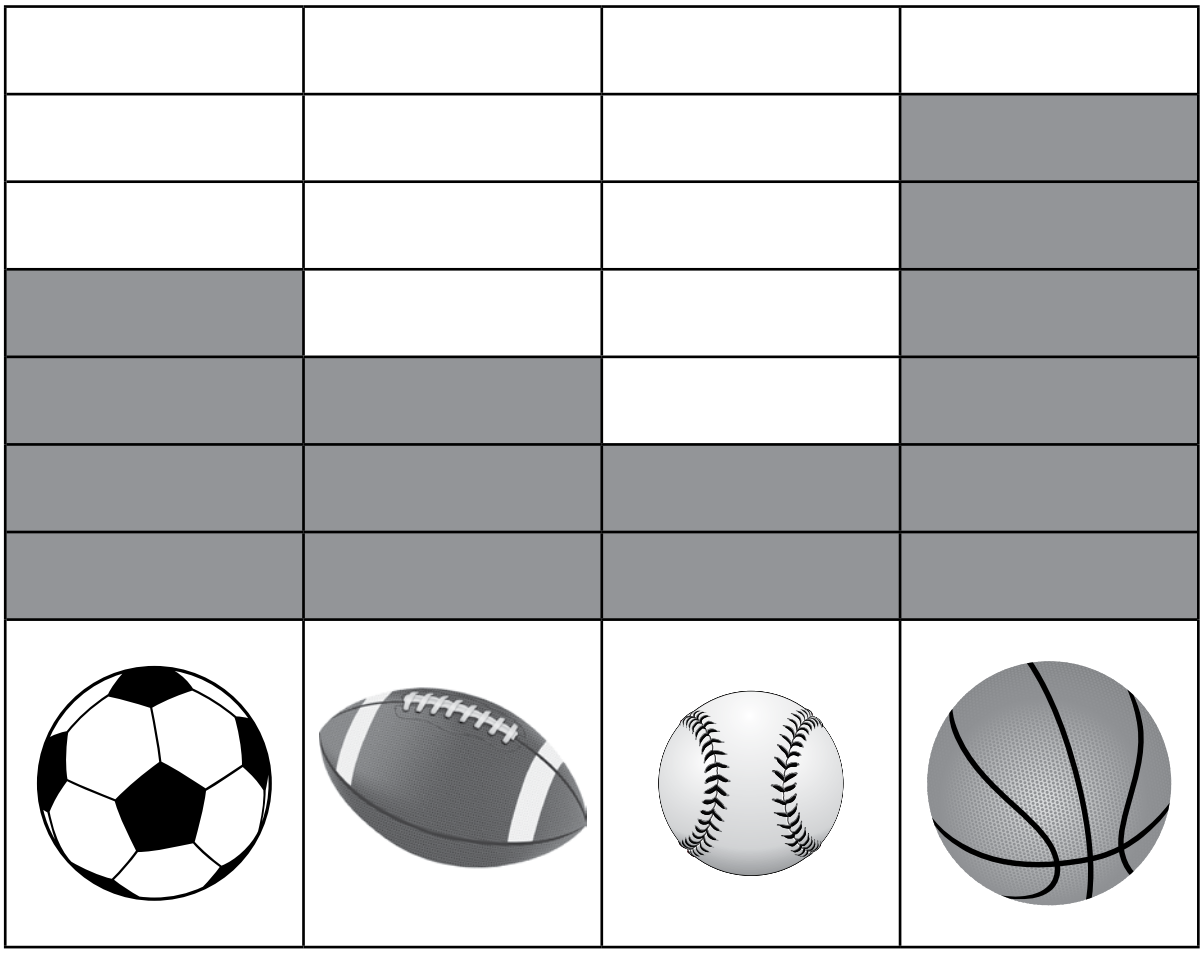
12. Have each partner group get together with two other partner groups to form groups of six. Have each partner group ask their questions about the graph. The remaining students in the group should use their clothespins to show their responses on their cards. Continue having students share until each of the questions has been shared. Be sure students share proof or justification as to why they chose the answer they did.

Favorite Sports Graph

Teacher Directions: Display the following graph to students.

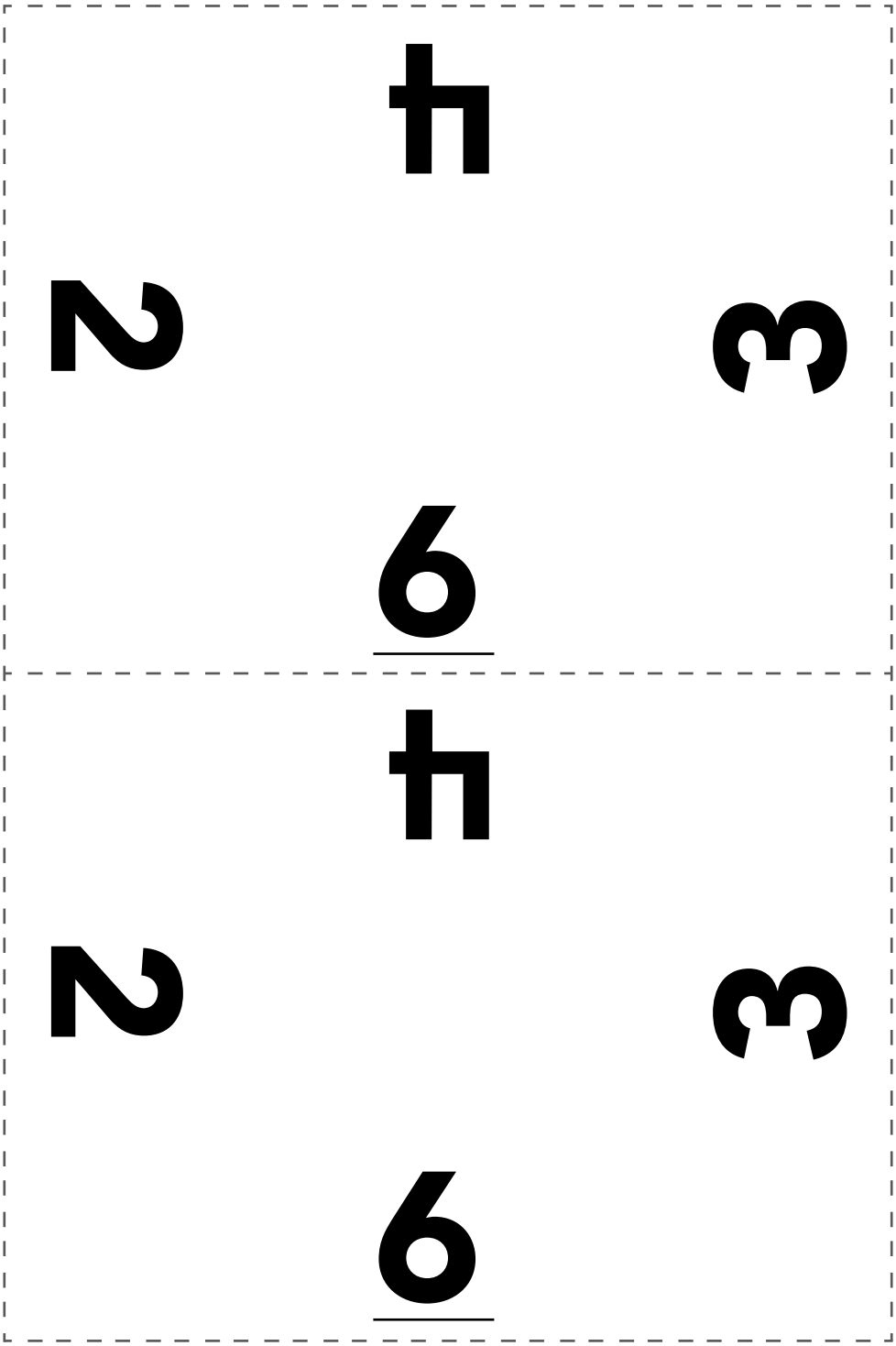
Favorite Sport

Total



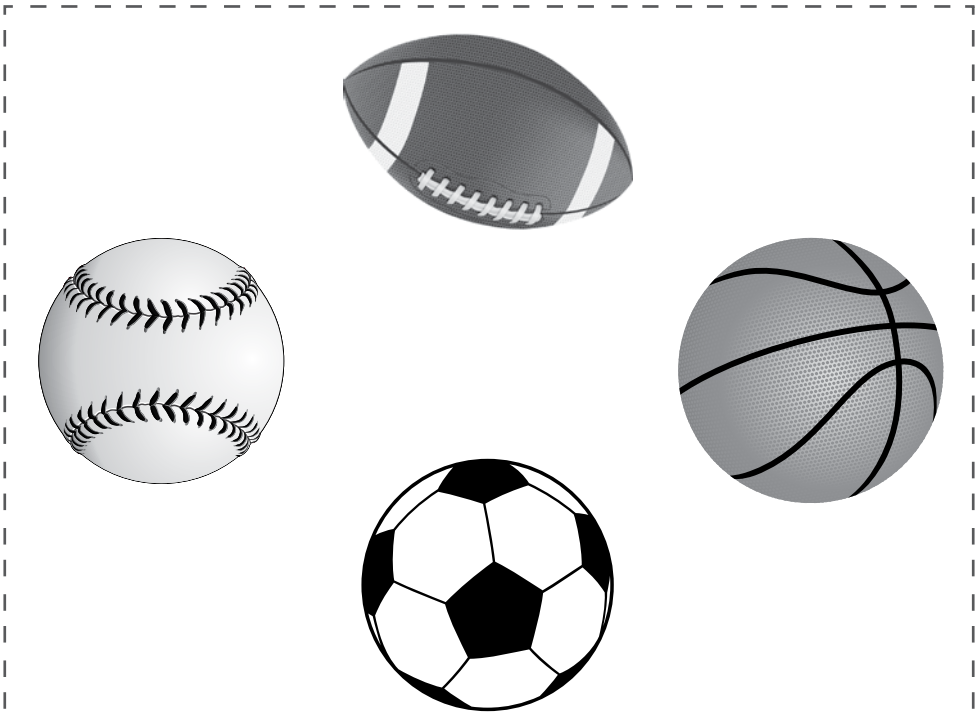
Graph Response Cards 1

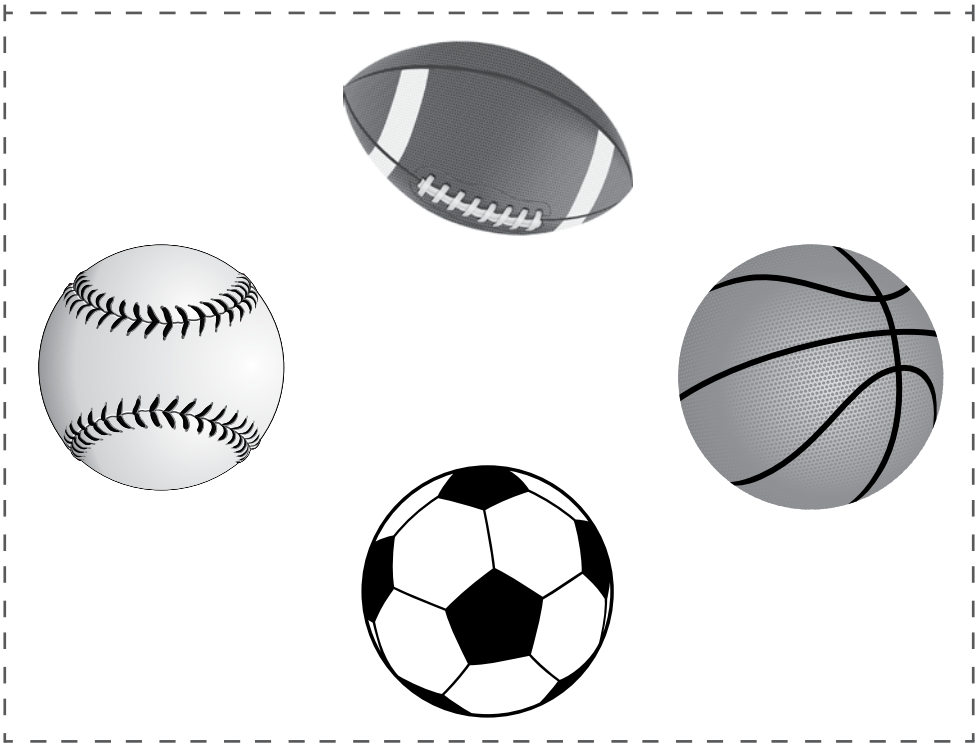
Teacher Directions: Cut apart the cards below.



Graph Response Cards 2

Teacher Directions: Cut apart the cards below.





Equality Workers

Brain-Powered Strategy

Response Cards

Standard

Understands how individuals have worked to achieve the liberties and equality promised in the principles of American democracy and to improve the lives of people from many groups

Vocabulary Words

- democracy
- equality
- liberty

Materials

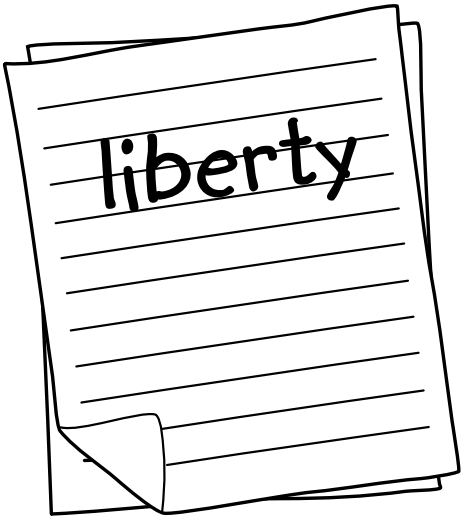
- *Equality Workers Response Cards* (page 85)
- *My Person* (page 86)
- writing paper
- books about Martin Luther King Jr., Rosa Parks, Sojourner Truth, and César Chávez
- clothespins

Preparation Note: Prior to the lesson, cut apart the *Equality Workers Response Cards* (page 85). You may wish to laminate the cards for durability.

Procedures

Model

1. Divide students into groups of four. Provide each group with a sheet of writing paper.
2. Tell students that you will say a word. They need to write down any words they think of when they hear your word. Say the word *equal*. Allow time for students to work. Monitor each group and have them share the words they wrote. As you move around the room, have groups share words that have not already been named. If time allows, repeat the activity with the word *liberty*.
3. Explain to students that there are many people in the history of the United States who have worked for equal rights for all people. Tell students that they will learn about some of those people.
4. Read books and complete any corresponding activities about each of the individuals you want to teach about. This part of the lesson may take place over several days or weeks and needs to be completed before attempting the activity.



Equality Workers *(cont.)*

Apply/Analyze

5. Tell students that they will be doing a strategy called *Response Cards*. (For detailed information on this strategy, see page 14.)

6. Distribute an *Equality Workers Response Card* and a clothespin to each student.

7. Ask questions that can be answered with one of the responses on the *Equality Workers Response Card*. Alter the questions based on information read in the books. For example:
   - Who was born into slavery?
   - Who was a farm worker's labor leader?
   - Who was a minister?
   - Who received the Nobel Peace Prize?
   - Which person won the first court case against a white man?

8. Have students move their clothespins to the sides of the response cards that represent their answers. Ask students to discuss their answers with a partner and explain why they chose their answers, even if they chose the same one. This is an opportunity to learn what others think.

Evaluate/Create

9. Distribute writing paper to students. Ask student partners to create questions that have more than one answer about the people on the response cards. For example, students could ask: *Which person or persons promoted non-violence?*

10. Have students get together with a partner. Each pair needs one response card and two clothespins.

11. Have one partner group at a time stand and ask the questions they created. Have the remaining partner groups answer the questions by placing their clothespins on the sides of the response cards that answer the questions. Provide time for students to discuss their answers and their reasons for choosing their answers. Continue until all questions have been asked.

12. Distribute the *My Person* activity sheet (page 86) to students. Have students draw one person they chose to best represent equality. Then, have them write about the person by describing characteristics that make them represent equality. They should share how this person improved or would improve the lives of others. Have students share their writing with partners.

Equality Workers Response Cards

Teacher Directions: Cut apart the cards below.

Rosa Parks	**Martin Luther King Jr.**
Sojourner Truth	**César Chávez**
Rosa Parks	**Martin Luther King Jr.**
Sojourner Truth	**César Chávez**

Name: _____ Date: _____

My Person

Directions: Draw a person who represents equality. Then, describe how this person has improved the lives of others.

_____

_____

_____

_____

_____

Add Meaning

Brain-Powered Strategy

Matchmaker

Standard

Decode words with common prefixes and suffixes

Vocabulary Words

- prefix
- suffix

Materials

- *Prefix Cards* (pages 89–95)
- *Suffix Cards* (pages 96–102)
- *Show Your Understanding* (page 103)
- chart paper
- tape
- writing paper

Preparation Note: Prior to the lesson, determine if you want to use the *Prefix Cards* (pages 89–95), the *Suffix Cards* (pages 96–102), or both. Cut apart the selected cards. This lesson needs to be completed over the course of several days or weeks.

Procedures

Model

1. Tell students that you will show them two actions. They should try to determine what words you are showing.
2. Untie a shoe and then tie it again. Repeat the action if needed. Have students discuss in pairs what you showed them. Have students share out loud what they determine. Discuss with the class the two words (*untie* and *retie*).
3. Explain to students that prefixes can be added to the beginning of words to add meaning and that prefixes usually add the same meaning when they are used. Explain that adding *un-* to the beginning of the word *tie* makes the word *untie* which showed that you were doing the opposite of the word. If you add the word *un-* to *lock* it makes *unlock*, no longer locked. *Un-* means *not*. So not tied and not locked.
4. Explain suffixes to students either at the same time or during a separate lesson.
5. Display a sheet of chart paper and write the prefixes and suffixes you want your students to identify. Explain that throughout the week, as students read or hear words with prefixes or suffixes, the class will add them to the appropriate chart.
6. Point out words that can be added to the chart throughout the week and encourage students to add to the growing list as well. Discuss each word as it is added to the list and how the prefix or suffix helps with understanding.

Add Meaning *(cont.)*

Apply/Analyze

7. Tell students that they will be doing an activity called *Matchmaker*. (For detailed information on this strategy, see page 15.)

8. Distribute a *Prefix Card* or *Suffix Card* to each student. Have students attach the cards to their shirts using tape.

9. Have students stand in a circle. Place the cards with the definitions on them on the floor randomly in the center of the circle.

10. Ask students to pick up the cards from the center of the circle without grabbing the card that matches their prefixes.

11. Have students hold hands around the circle as they also hold the card they picked up. Students must get the definition card to the person with the matching suffix without letting go of their hands.

12. Allow students to not hold hands if needed; however, the energy level and engagement level increases with the challenge of holding hands and moving the cards around the circle.

13. Have students read the prefixes and the matching definitions aloud once they have matched all of the cards. The rest of the group can agree or disagree and if needed, move the cards to the correct student.

Evaluate/Create

14. Distribute the *Show Your Understanding* activity sheet (page 103) to each student. Have students circle the prefixes in the sentence in the top row. Have them rewrite the sentence without the prefixes. Then, ask them to write how the meaning of the sentence changed.

15. Have students work with partners to create their own sentences with prefixes and without prefixes on writing paper. Allow several groups to share their sentences with the whole class.

16. Provide students with a list of root words. Have them choose one. Using the list of prefixes/suffixes, have each student attach one to his or her root word, whether or not doing so makes a real word. If real, what does his or her word mean? If not real, what might it mean?

Prefix Cards

Teacher Directions: Cut apart the cards below.

un-

no, opposite of

Prefix Cards *(cont.)*

re-

again, back

Prefix Cards *(cont.)*

over-

too much, above

Prefix Cards *(cont.)*

mis-

wrongly

Prefix Cards *(cont.)*

pre-

before

Prefix Cards *(cont.)*

under-

too little, below

Prefix Cards *(cont.)*

sub-

under, lower

Suffix Cards

Teacher Directions: Cut apart the cards below.

-s

plural

Suffix Cards *(cont.)*

-ed

past tense

Suffix Cards *(cont.)*

-ly

characteristic of

Suffix Cards *(cont.)*

-er

person
connected with

Suffix Cards *(cont.)*

-ness

state or condition of

Suffix Cards *(cont.)*

-less

without

Suffix Cards *(cont.)*

-ful

full of

Name: _____ Date: _____

Show Your Understanding

Directions: Circle the prefixes in the sentence. Then, rewrite the sentence without the prefixes. How did the meaning of the sentence change?

Sentence

She misunderstood the nonfiction book.

Rewrite the sentence without the prefixes.

_____

_____

_____

How did the meaning of the sentence change?

_____

_____

_____

_____

Scientific Tools

Brain-Powered Strategy

Matchmaker

Standard

Knows that tools can be used to gather information and extend the senses

Vocabulary Words

- balance
- magnifying glass
- microscope
- ruler
- thermometer

Materials

- *Tools and Definitions Cards* (pages 106–112)
- hammer or other tool students will recognize
- scientific tools or pictures of scientific tools (e.g., balance, ruler, thermometer, microscope, magnifying glass)
- tape
- materials to use the scientific tools with (e.g., objects for students to measure with the ruler)

Preparation Note: Prior to the lesson, cut apart the *Tools and Definitions Cards* (pages 106–112).

Procedures

Model

1. Show students the hammer and ask them to identify it and its purpose.
2. Explain that a hammer is a tool that is used to help someone put a nail into a material like wood or take a nail out. Explain that all tools help people in some way. Have students name several other tools. Encourage many different types of tools to be mentioned, not just hardware tools. For example, a pencil is a tool used to help us write.
3. Display the scientific tools or pictures of the tools, one at a time. Explain the names of the tools and what they are used for.
4. Place the tools around the room and divide students into as many groups as you have types of tools. Place one group of students by each tool.
5. Provide time for students to experiment with the tools. Be sure to discuss with students the rules of safety for each tool. Either rotate students to all of the various tools or have students share with the whole class what they found through their investigations.

Scientific Tools *(cont.)*

Apply/Analyze

6. Tell students that they will be doing a strategy called *Matchmaker*. (For detailed information on this strategy, see page 15.)

7. Distribute the tool cards from the *Tools and Definitions Cards* to students. Have students tape their cards on their shirts.

8. Have students stand in a circle. Place the cards with the definitions on them on the floor randomly in the center of the circle.

9. Ask students to pick up the cards from the center of the circle without grabbing the card that matches their tool.

10. Have students hold hands around the circle as they also hold the card they picked up. Students must get the definition card to the person wearing the matching tool without letting go of their hands.

11. Allow students to not hold hands if needed; however, the energy level and engagement level increases with the challenge of holding hands and moving the cards around the circle.

12. Have students read the tools and the matching definitions aloud once they have matched all the cards. The rest of the group can agree or disagree and if needed, move the cards to the correct person.

13. Ask students to determine which sense each of the scientific tools helps to extend. For example, a magnifying glass helps extend the sense of sight. Come to a consensus as a class about each tool.

Evaluate/Create

14. Divide students into pairs. Have each pair choose an object from the classroom to observe.

15. Provide students with as many of the scientific tools as you have available. Have pairs observe the object in as many different ways as possible using the scientific tools.

16. Have the partners determine which scientific tool was the most/least helpful to gain more information about the object they observed.

17. Have two pairs join each other so there are now groups of four. Have each of the groups share with the other groups what object they observed, what they observed using the scientific tools, and which tool was the most/least helpful.

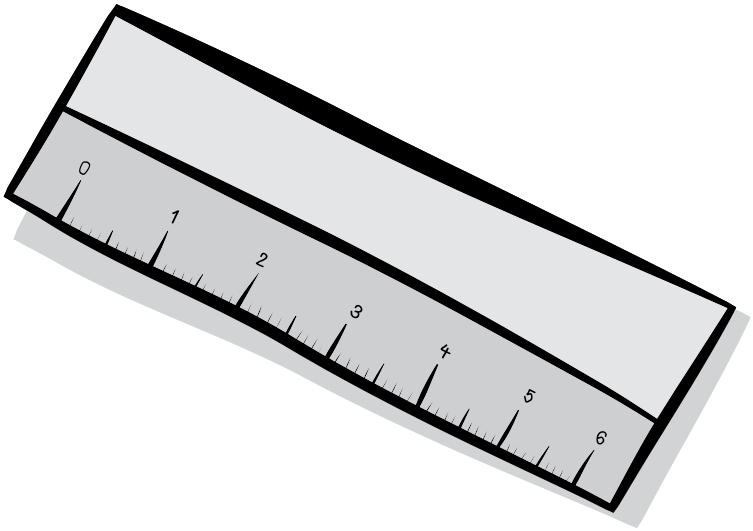
Tools and Definitions Cards

Teacher Directions: Cut apart the cards below.

magnifying glass

a handheld device for enlarging objects

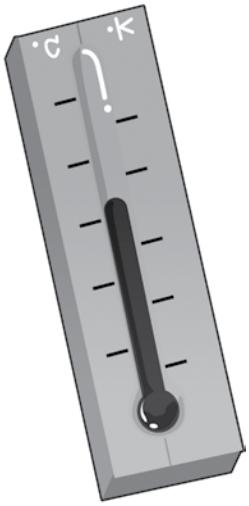
Tools and Definitions Cards *(cont.)*



ruler

a straight-edge, numbered strip that is used for measuring

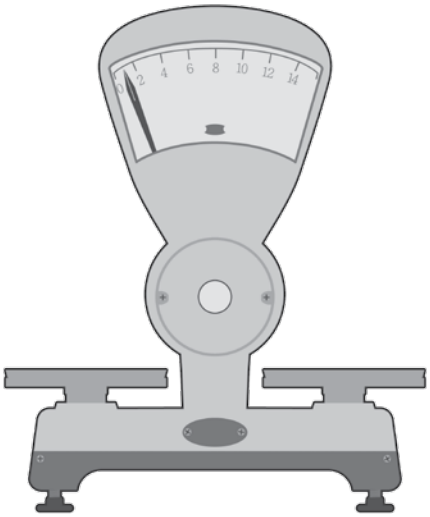
Tools and Definitions Cards *(cont.)*



thermometer

an instrument that measures temperature

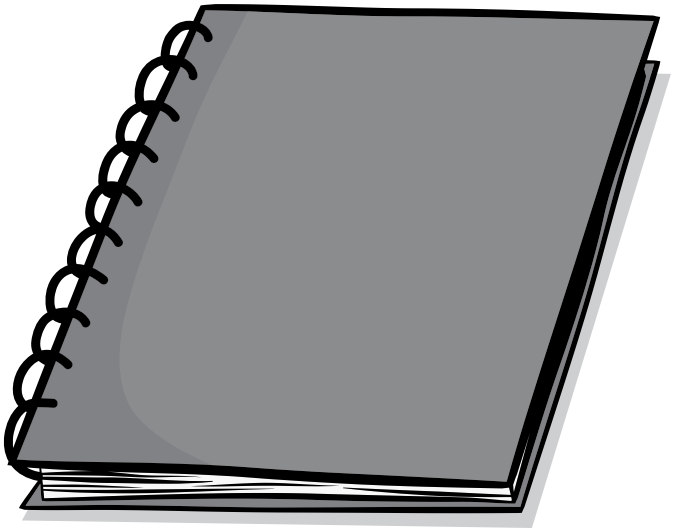
Tools and Definitions Cards *(cont.)*



scale

a device that measures weight

Tools and Definitions Cards *(cont.)*



journal

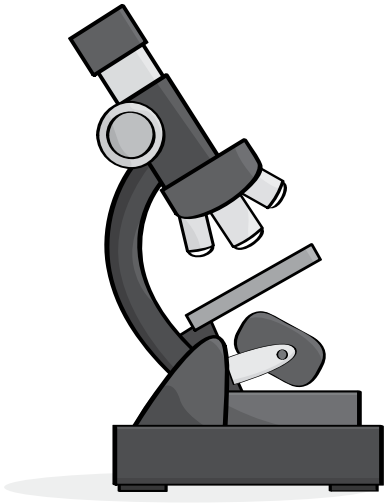
a place for taking notes

Tools and Definitions Cards *(cont.)*

telescope

an instrument for looking at distant objects

Tools and Definitions Cards *(cont.)*



microscope

an instrument for enlarging objects

Sharing Beliefs and Values

Brain-Powered Strategy

Matchmaker

Standards

Knows ways in which people share family beliefs and values

Vocabulary Words

- beliefs
- mementos
- oral traditions
- values

Materials

- *Beliefs and Values Cards* (pages 115–123)
- personal family memento (*optional*)
- tape
- writing paper
- literature on family traditions (e.g., *Ashanti to Zulu: African Traditions* by Margaret Musgrove)
- chart paper

Preparation Note: Prior to the lesson, cut apart the *Beliefs and Values Cards* (pages 115–123).

Procedures

Model

1. Share with students a personal family memento, tell about a food your family has eaten for generations, or tell about some other way your family shares beliefs or values.
2. Explain to students that every family has something they share in common that shows their beliefs and values as a family.
3. Read a book, such as *Ashanti to Zulu: African Traditions*, about traditions and how they are shared among people.
4. As a class, define the various ways people share their family beliefs and values as described in the book. Begin a chart that can be added to as new ways are discovered throughout the lesson.
5. Discuss each item listed on the chart paper and allow students to share their personal experiences from their families that fall under each category. Add specific experiences students share under the corresponding categories on the chart.

Sharing Beliefs and Values *(cont.)*

Apply/Analyze

6. Tell students that they will be doing a strategy called *Matchmaker*. (For detailed information on this strategy, see page 15.)

7. Distribute a vocabulary card from the *Beliefs and Values Cards* to students. Have students tape their cards to their shirts.

8. Have students stand in a circle. Place the cards with the definitions on them on the floor randomly in the center of the circle.

9. Ask students to pick up the cards from the center of the circle, without grabbing the card that matches their method of sharing.

10. Have students hold hands around the circle as they also hold the card they picked up. Students must get the definition cards to the people wearing the matching word without letting go of their hands.

11. Allow students to not hold hands if needed; however, the energy level and engagement level increases with the challenge of holding hands and moving the cards around the circle.

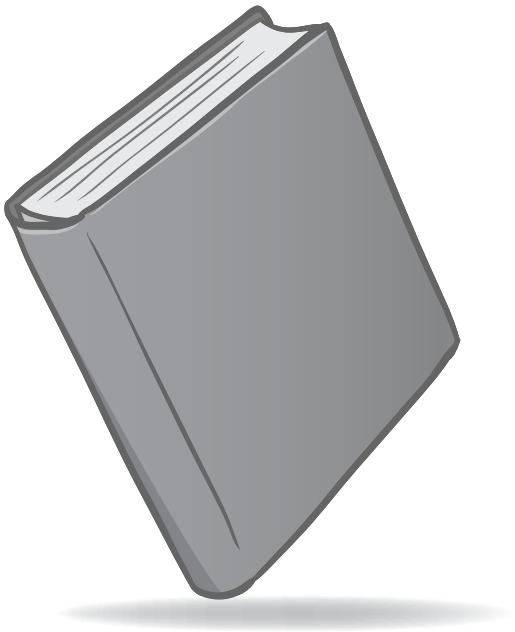
12. Have students read the words and the matching definitions aloud once they have matched all the cards. The rest of the group can agree or disagree and if needed, move the cards to the correct person.

Evaluate/Create

13. Direct students back to the chart created in Steps 4–5.

14. As a class, identify categories listed on the chart. For example, a category could be *ways to celebrate birthdays* or *religious ceremonies*.

15. Have students choose one of the categories and one of the specific examples listed in that category. Ask students to determine if their families share that belief or value in the same way, a similar way, or not at all. Have students write a brief description of what they determine and why such beliefs and values are important.



Beliefs and Values Cards

Teacher Directions: Cut apart the cards below.

oral traditions

stories or beliefs told orally from generation to generation

Beliefs and Values Cards *(cont.)*

literature

writings or stories

Beliefs and Values Cards *(cont.)*

songs

melodies with words that are sung

Beliefs and Values Cards *(cont.)*

art

works created to show ideas or feelings

Beliefs and Values Cards *(cont.)*

religion

belief in a god or group of gods

Beliefs and Values Cards *(cont.)*

celebrations

special occasions
with festivities

Beliefs and Values Cards *(cont.)*

mementos

things that serve to remind

Beliefs and Values Cards *(cont.)*

food

items you eat that nourish

Beliefs and Values Cards *(cont.)*

language

words and their pronunciations

Comparing Stories

Brain-Powered Strategy

Just Say It

Standard

Compare and contrast two or more versions of the same story by different authors or from different cultures

Vocabulary Words

- compare
- contrast
- version

Materials

- *Let's Compare* (page 126)
- two versions of the same story by different authors or from different cultures
- chart paper (*optional*)
- two classroom items to compare
- writing paper

Procedures

Model

1. Read each of the two versions of the selected stories.
2. Complete any desired book-related activities. Through the activities, students should gain a good understanding of each individual text.
3. Show the two items you selected to compare. Tell students that *comparing* means to tell what is the same. Ask students to compare the two items. Record students' ideas on a sheet of chart paper if desired.
4. Tell students that *contrasting* means to tell what is different. Ask students to contrast the two items.

Comparing Stories *(cont.)*

Apply/Analyze

5. Display the covers of the two texts that were read. Explain to students that they are going to compare and contrast the two stories.

6. Tell students that they will be doing an activity called *Just Say It*. (For detailed information on this strategy, see page 16.)

7. Divide students into pairs. Have the two students face each other and identify one as Partner *A* and the other as Partner *B*.

8. Have Partner *A* make as many comparisons between the two books as possible in 30 seconds. Partner *B* should listen attentively.

9. Provide Partner *B* 30 seconds to respond or add more details to what Partner *A* said. Partner *A* should listen attentively.

10. Have partners switch roles and allow Partner *B* to contrast the two books for 30 seconds while Partner *A* listens. Then, provide Partner *A* time to respond.

Evaluate/Create

11. Distribute the *Let's Compare* activity sheet (page 126) and writing paper to students. Ask students to take notes for each story on the activity sheet. Then, have students use their notes to write a short paragraph about which story version they liked better and why.

12. Gather the class back together and allow students to vote for which story they thought was the best.

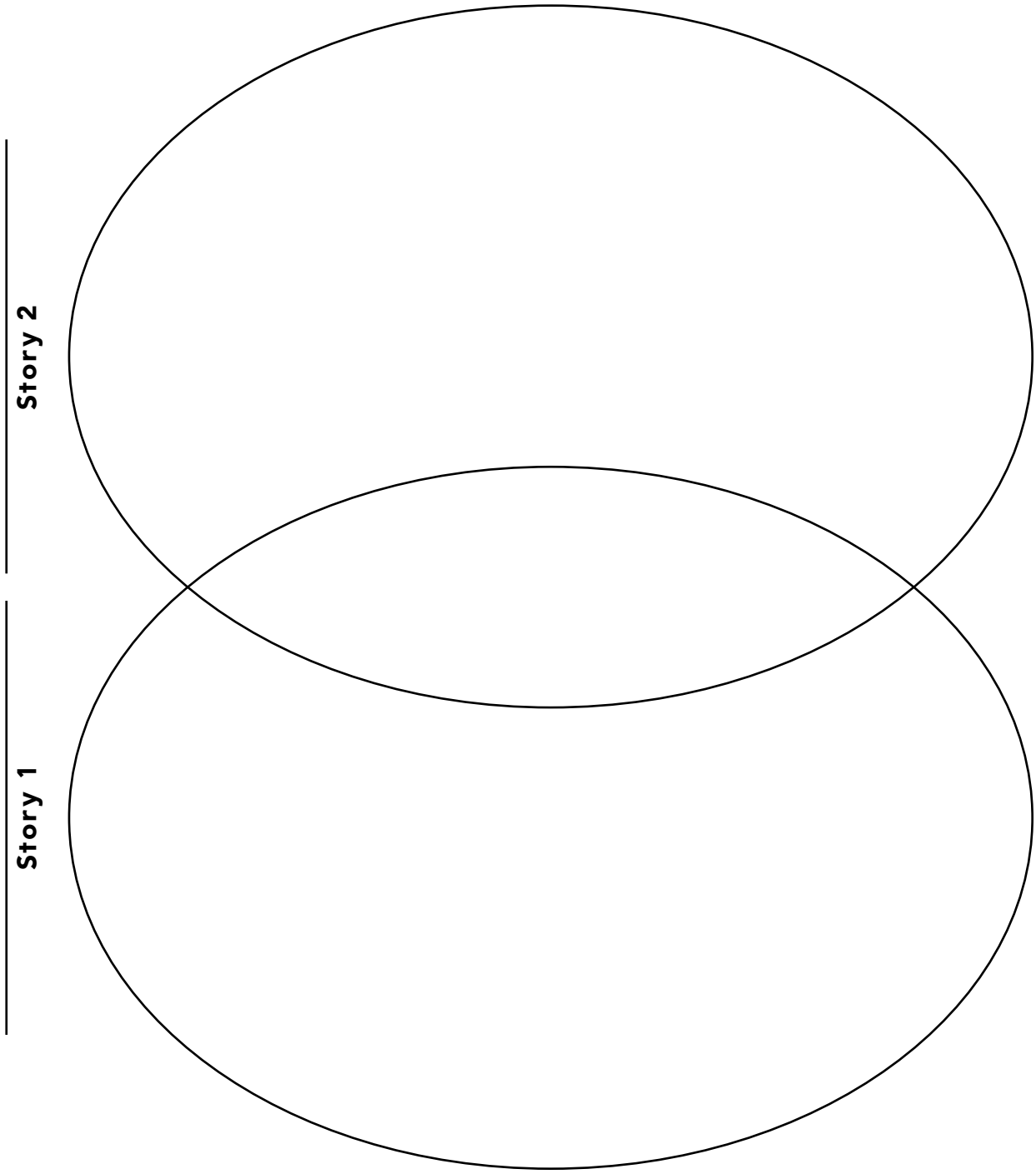
13. Have several students who have different perspectives share their paragraphs out loud with the class.

14. Discuss the results of the vote with the class. As a class, assess whether or not it can be determined why one was the clear favorite.

Name: _____ Date: _____

Let's Compare

Directions: Write how both stories are different (outside) and alike (middle). Then, write a paragraph on a separate sheet of paper about which story you like better and why.



Inform Me

Brain-Powered Strategy

Just Say It

Standard

Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section

Vocabulary Words

- conclusion
- fact
- informative
- opinion
- support
- topic

Materials

- chart paper
- informational book (teacher-chosen topic)
- writing paper
- teacher-written prompt about the topic of the book

Procedures

Model

1. Tell students that an *opinion* is a personal belief and may be different for different people. Explain that a *fact* is something that is true and is the same for all people. Provide several examples of each.
2. Explain to students that you will say several statements. If the statement is an opinion, they should show one finger. If the statement is a fact, they should show two fingers.
3. Provide students with several opinion and fact statements. Monitor their understanding of the difference between the two.
4. Review with students the various places that they can find facts (e.g., books, experiences, personal knowledge, websites).
5. Model writing a paragraph about yourself on a sheet of chart paper based on facts students will be familiar with. For example:
   - Mrs. Righter teaches at Maxfield School. (*introduction*)
   - Her classroom is room 8. (*fact*)
   - She has 27 students. (*fact*)
   - On Wednesdays, she has yard duty. (*fact*)
   - She is one of 17 teachers at the school. (*conclusion*)

Inform Me *(cont.)*

6. Explain to students that another place they can gather facts is from nonfiction texts. Display and discuss the front cover of the informational book you have chosen.

7. Read the informational book to students, pausing where appropriate to discuss.

Apply/Analyze

8. Tell students that they will be doing a strategy called *Just Say It*. (For detailed information on this strategy, see page 16.)

9. Tell students that they will write an informational paragraph about the topic of the book you read. Explain that they will need to include facts in their paragraphs.

10. Divide students into pairs. Have the two students face each other and identify one as Partner *A* and the other as Partner *B*.

11. Have Partner *A* recount as many facts from the book as he or she can remember. Provide 30 seconds. Partner *B* should listen attentively.

12. Provide Partner *B* 30 seconds to add more detail to what Partner *A* said or add new facts. Partner *A* should listen attentively.

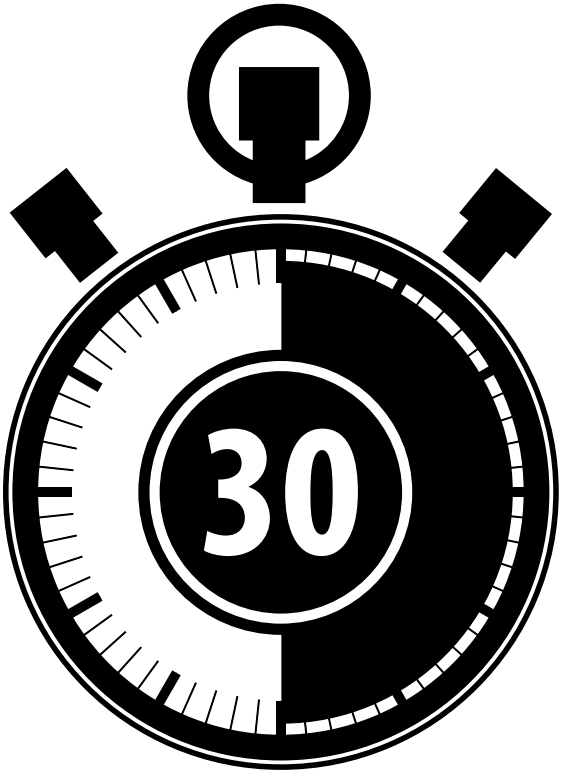
13. Allow time for the partners to write down the facts they each recounted that they may want to use in their paragraphs.

Evaluate/Create

14. Distribute writing paper to students and state the teacher-written prompt to the class.

15. Have students respond to the prompt by using their notes about facts from the book.

16. Allow students to get together with their partners and read their informative paragraphs. Encourage partners to give additional feedback, which may be helpful as students revise their pieces.



Animal Features

Brain-Powered Strategy

Just Say It

Standard

Knows that plants and animals have different features that help them live in different environments

Vocabulary Words

- environment
- feature
- habitat

Materials

- *Create an Animal* (page 131)
- chart paper
- photographs of animals being studied

Procedures

Model

1. Ask students to place a pencil on their desks. Have students pick up the pencil using their thumbs and index fingers.
2. Discuss with students that our ability to do that is because our bodies have the features of our thumbs and fingers that can grasp onto things to pick them up.
3. Ask students to think of ways the ability to grasp onto things helps us (e.g., we can pick up food).
4. Explain that all animals (and plants) have features that help them in some way.
5. Create a three-column table on a sheet of chart paper. Label the columns with the following types of features of animals: *body coverings*, *body features* (such as limbs or pouches), and *movement*.
6. Display a photograph of an animal. Discuss with students the features of the animal. Record the features students name in the appropriate column.
7. Ask students to name any other animals with similar features.
8. Continue to display animal photographs and discuss the features of the animals. Add any connections students make to the chart.

Animal Features *(cont.)*

Apply/Analyze

9. Tell students that they will be doing a strategy called *Just Say It*. (For detailed information on this strategy, see page 16.)

10. Divide students into pairs. Have the two students face each other and identify one as Partner *A* and the other as Partner *B*.

11. Display a photograph of an animal. Have Partner *A* make as many observations about the animal, its features, or its environment as possible in 30 seconds. Partner *B* should listen attentively.

12. Provide Partner *B* 30 seconds to respond or add more detail to what Partner *A* said. Partner *A* should listen attentively.

13. Have partners switch roles and allow Partner *B* to make additional observations for 30 seconds.

Evaluate/Create

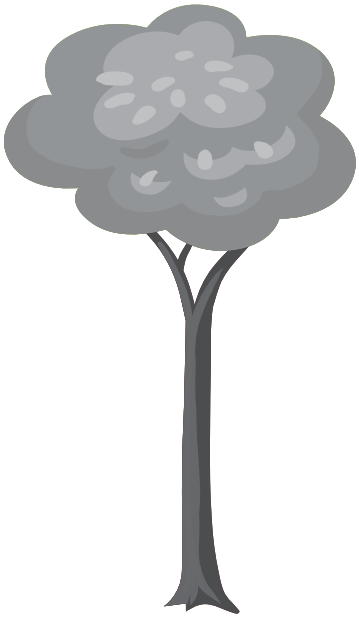
14. Distribute the *Create an Animal* activity sheet (page 131) to students. Ask students to create an animal with features that allow it to get food that is high in a tree.

15. Have students share their drawings and writing with their partners. Encourage partners to give feedback about each animal and its features.

Name: _____ Date: _____

Create an Animal

Directions: Illustrate an animal with features that allow it to get food that is high in a tree. Write about the animal's features and why it needs them.



_____

_____

_____

_____

_____

_____

Describe It

Brain-Powered Strategy

In the Know

Standard

Use adjectives and adverbs, and choose between them depending on what was modified

Vocabulary Words

- adjective
- adverb

Materials

- *In the Know Chart* (page 139)
- *Adjectives and Adverbs* (page 134)
- chart paper
- pictures of people or objects
- sticky notes

Preparation Note: Prior to the lesson, duplicate the *In the Know Chart* activity sheet (page 139) on a sheet of chart paper. **Note:** If desired, have students complete Steps 9–12 both before and after teaching about adjectives and adverbs. Students can compare their understanding before the lesson and after the lesson to assess their learning.

Procedures

Model

1. Write the following sentence on the board: *The red car drove quickly down the road.*
2. Explain to students that this is a good descriptive sentence because it paints a picture by using describing words. Discuss the words *red* and *quickly* in the sentence and how they describe the car and how it was driven.
3. Tell students that they will learn about describing words called *adjectives* and *adverbs*.
4. Display a picture that can easily be described with adjectives. (It is easiest if the picture shows only one or two large items such as a car or person.) As a class, determine a sentence that can be used to tell about the picture.
5. Tell students that *adjectives* are words used to describe nouns. Provide examples of adjectives to help students understand the types of attributes an adjective can describe.
6. Have students name as many adjectives as they can to describe the displayed picture. Record the adjectives on the board or on a sheet of chart paper. Have students use the adjectives in complete sentences about the object.
7. Repeat Steps 4 and 5 in a separate lesson on another day, this time having students use adverbs to describe the verb.

Describe It (cont.)

Apply/Analyze

8. Tell students that they will be doing a strategy called *In the Know*. (For detailed information on this strategy, see page 17.)

9. Display the chart paper prepared with the three-column chart. Discuss the meaning of the symbols at the top of each column.

10. Distribute two sticky notes to each student. Have them write *adverbs* on one sticky note and *adjectives* on the other sticky note.

11. Ask students to think about their levels of understanding of adverbs and adjectives. Invite students to place their sticky notes in the column that corresponds with their understanding.

12. Have students discuss with a partner where they will put each of their sticky notes and why they chose the column they did. The goal here is for students to think about what they truly know about an adjective and adverb versus what they still need to learn.

Evaluate/Create

13. Distribute the *Adjectives and Adverbs* activity sheet (page 134) to students.

14. Ask students to draw a picture at the top of the paper and then create two sentences, one sentence that uses an adjective to describe a noun and another sentence that uses an adverb to describe a verb. Or challenge students to create one sentence that has both an adverb and adjective in the same sentence.

Name: _____ Date: _____

Adjectives and Adverbs

Directions: Draw a picture of an object. Write a sentence about it that uses an adjective and an adverb.

My Picture

_____

_____

_____

_____

_____

_____

Wonderful Water

Brain-Powered Strategy

In the Know

Standard

Knows that water can be a solid or a liquid and can be made to change from one form to the other, but the amount of water stays the same

Vocabulary Words

- freeze
- liquid
- solid
- thaw

Materials

- *In the Know Chart* (page 139)
- chart paper
- wax paper
- toothpicks
- water
- measuring cup
- clear container
- access to a freezer
- ice cubes
- writing paper

Preparation Note: Prior to the lesson, duplicate the *In the Know Chart* activity sheet (page 139) on a sheet of chart paper. **Note:** If desired, have students complete Steps 9–11 before teaching the lesson on solid and liquid forms of water and then again after, so students can assess their understanding and learning.

Procedures

Model

1. Distribute a sheet of wax paper and a toothpick to each student. Drop a small amount of water on the wax paper. Allow students to experiment with the water and the toothpick.
2. Discuss with students what they observed about the properties of water.
3. Explain to students that water can come in various forms and that the water they used on the wax paper was in liquid form. Review with students the properties of liquids.

Wonderful Water *(cont.)*

4. Tell students that liquid water can be changed to a solid state. Ask students to identify how. (Freezing water forms ice.) Tell students that they will find out if the amount of water stays the same when the form changes.

5. Measure some water and place it in a clear container. Place the container in a freezer and wait until the water is frozen.

6. Observe the frozen water and discuss students' observations.

7. Allow the ice to melt back into water and measure the water again. Discuss the results.

Apply/Analyze

8. Tell students that they will be doing a strategy called *In the Know*. (For detailed information on this strategy, see page 17.)

9. Display the chart paper prepared with the three-column chart. Discuss the meaning of the symbols at the top of each column.

10. Distribute two sticky notes to each student. Have them write *solids* on one sticky note and *liquids* on the other sticky note.

11. Ask students to think about their levels of understanding of solids and liquids. Invite students to place their sticky notes in the columns that correspond with their understanding.

12. Have students discuss with a partner where they should put each of their sticky notes and why they chose the column they did.

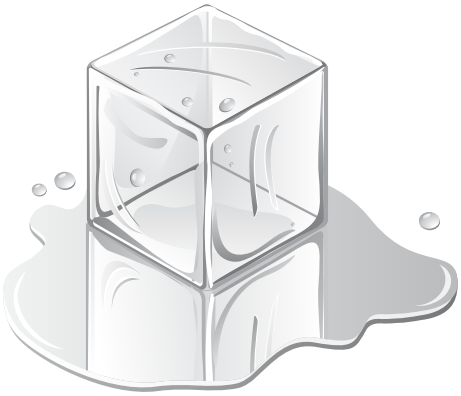
Evaluate/Create

13. Distribute an ice cube and writing paper to each student. Challenge students to change the ice cube from a solid to a liquid as fast as they can. Allow students to experiment and learn from each other effective ways to melt the ice cube. Time students so they know how long each took. Ask students to write a sentence explaining their methods.

14. Have students share their sentences with the class. Discuss some of the ways students used to melt the ice cube. Which were the most/least effective? How do students know what was most/least effective?

15. Distribute another ice cube to students. Challenge them to use what they learned from the discussion and by watching other students to try to beat their original times to melt the ice cube.

16. Have students write a second sentence describing the method used the second time. Have students write a third sentence to explain if they used the same method as the first time or if they changed their tactic and why.



Geographic Features

Brain-Powered Strategy

In the Know

Standard

Knows that places can be defined by their predominant human and physical characteristics

Vocabulary Words

- desert
- forest
- ocean
- plain
- pond

Materials

- *In the Know Chart* (page 139)
- *My Type of Environment* (page 140)
- chart paper
- books describing physical characteristics of places
- sticky notes

Preparation Note: Prior to the lesson, you may wish to have students do a pre-lesson assessment of their knowledge of the vocabulary by completing Steps 6–10, and then again after learning about the vocabulary.

Procedures

Model

1. Ask students to describe the area where your school is located. Write students' responses on the board or on a sheet of chart paper.
2. Identify with students which of the responses describes a human characteristic or a physical characteristic.
3. Explain that places can be described by their human and physical characteristics. Provide examples of human characteristics such as *urban*, *suburban*, and *rural*. Explain that the class will be learning about physical characteristics of land.
4. Read about each type of physical characteristic you wish to cover, for example *forest*, *desert*, *plain*, *ocean*, and *pond*. This will take place over several days or weeks depending on how familiar students are with the types of land features. Chart and display information about each type of land region.
5. Return to the chart with the description of where your school is located. Ask students if they want to revise the chart in any way based on what they have learned.

Geographic Features (cont.)

Apply/Analyze

6. Tell students that they will be doing a strategy called *In the Know*. (For detailed information on this strategy, see page 17.)

7. Distribute the *In the Know Chart* activity sheet (page 139) to students. Discuss the meaning of the symbols at the top of each column.

8. Distribute enough sticky notes for each word being studied to students. For example, if there are seven words, each student needs seven sticky notes. Have them write each vocabulary word on each sticky note.

9. Ask students to think about their levels of understanding of each word. Ask students to place their sticky notes in the columns that correspond with their understanding of each word.

10. Have students discuss with a partner where they should put each of their sticky notes and why they chose the columns they did.

Evaluate/Create

11. Distribute the *My Type of Environment* activity sheet (page 140) to students. Ask students to choose which type of environment they would like to live in. Have students draw pictures of that environment and write characteristics of the environment, explaining why they would want to live there.

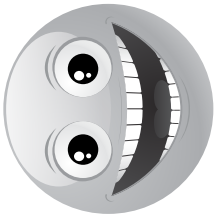
12. Allow each student to quickly share his or her writing with the whole class. Ask students to keep track of the students' choices.

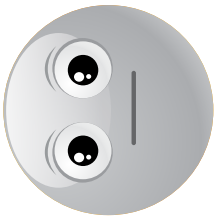
13. Have students revisit their charts to see if they have a better understanding of each word in Step 8. If so, they should move that sticky note to its appropriate column.

Name: _____ Date: _____

In the Know Chart

Directions: Place your sticky notes in the appropriate columns.





Name: _____ Date: _____

My Type of Environment

Directions: Choose which type of environment you would like to live in. Draw a picture of that environment and write why you would want to live there.

My Environment

I would want to live here because . . .

_____

_____

_____

_____

_____

Estimating Measurement

Brain-Powered Strategy

WPH Accordion

Standards

Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes

Estimate lengths of units of inches, feet, centimeters, and meters

Vocabulary Words

- estimate
- measure

Materials

- *Measuring Tools Cards* (page 143)
- measuring tools
- objects to measure
- half-sheets of paper (cut horizontally)

Preparation Note: Prior to the lesson, cut apart the *Measuring Tools Cards* (page 143).

Procedures

Model

1. Tell students that you will walk from a certain point in the room to the classroom door. Have students count aloud with you as you take steps to the door.
2. Select a student to walk the same length you did. Have students count aloud as the student takes steps to the door.
3. Discuss why the number of steps you took was different from the number of steps the student took. Display your shoe and the student's shoe to show the discrepancy in size.
4. Explain to students that using standard measuring tools helps eliminate discrepancies in measuring.
5. Review the various measuring tools you have already introduced as part of a measurement unit. Discuss which units of measure are used with each measuring tool.
6. Display an object to measure. Discuss with students which measuring tool would be best used to measure the object.
7. Model how to measure the selected object.

Estimating Measurement *(cont.)*

Apply/Analyze

8. Tell students that they will be doing a strategy called *WPH Accordion*. (For detailed information on this strategy, see page 18.)

9. Provide a half-sheet of paper cut lengthwise to each student. Instruct students to fold the paper in half and then in half again to create four equal sections. Then, have students bend the first crease back, the second crease forward, and so on, in order to create an accordion effect.

10. Instruct students to turn the closed paper so that the first fold is at the top. While keeping the paper closed to the other sections, have students write or draw a title such as *Measurement*.

11. Distribute an object to be measured to each student or pair of students.

12. On the second section, have students label a *W* in the corner for *what* is involved and a question mark as a symbol. Have students write or draw about what is involved in measuring the object. What unit of measure will be used? What tool will be used? What will the steps be to measure the object? Choose one or more questions to focus on, depending on class needs.

13. On the third section, have students label a *P* in the corner for *predict* and draw an arrow pointed to the right, indicating the future. Have students make a prediction or an estimate of how long the object will be and why.

14. For the last section, instruct students to label an *H* in the corner and draw three short, parallel lines like a list. The *H* stands for what *happens*. Have students actually measure the object and record the results in this box. Students should also write about how close or far off their predictions were.

Evaluate/Create

15. Have students open their accordion-fold paper and then turn it over to the back.

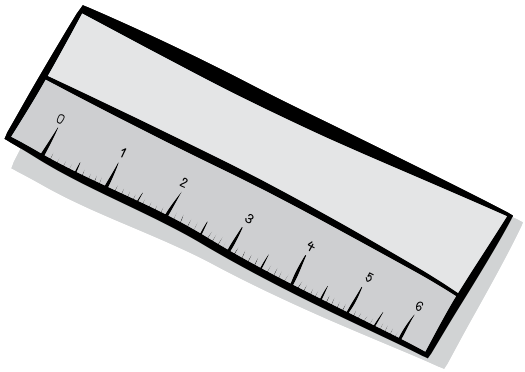
16. Ask students to determine if they used an appropriate unit and tool for measuring the object they were given or if they would change the unit and tool and why.

17. Divide students into groups of four. Distribute a set of the *Measuring Tools Cards* to each group. Have groups place the cards facedown in a pile. Have one member of the group flip over the top card so that all members can see. Going clockwise from the first student who flipped over the top card, students must say an object that can be measured using the tool on the card.

18. Repeat Step 17 but have another student in the group flip over the next card.

Measuring Tools Cards

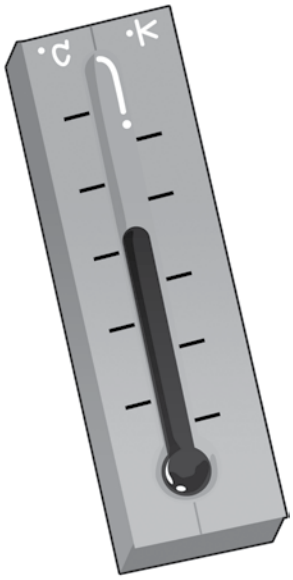
Teacher Directions: Cut apart the cards below.



ruler

measuring cup

scale



thermometer

Predictions in Science

Brain-Powered Strategy

WPH Accordion

Standard

Makes predictions based on given patterns

Vocabulary Words

- experiment
- galaxy
- moon
- prediction
- solar system

Materials

- half-sheets of paper (cut horizontally)
- drawing paper
- pictures of different phases of the moon
- writing paper

Procedures

Model

1. Explain to students that a *pattern* is a set of things that are arranged following a rule or rules. On the board, write *A-B-A-B-A*. Tell students that if the pattern continues, the next letter would be *B*.

2. Have students look around the room for objects with patterns (e.g., the tile floor, designs on a bulletin board). Explain to students that sometimes we can easily see patterns, while other things have a pattern that is not as obvious, such as a plant's flowers blooming.

3. Ask students to list objects they see in the sky during the day and at night. Have students share whether these objects always look the same or if they change. If they change, in what way? Make the connection between obvious patterns and patterns that are observed over time.

Apply/Analyze

4. Tell students that they will be doing a strategy called *WPH Accordion*. (For detailed information on this strategy, see page 18.)

5. Distribute half-sheets of paper cut lengthwise to students. Instruct students to fold the paper in half and then in half again to create four equal sections. Then, have students bend the first crease back, the second crease forward, and so on, in order to create an accordion effect.

6. Instruct students to turn the closed paper so that the first fold is at the top. While keeping the paper closed to the other sections, have students write *The Moon in the Sky.*

Predictions in Science *(cont.)*

7. On the second section, have students label a *W* in the corner for *what* is involved and a small question mark as a symbol for *what*. Have students write the word *moon* and add an illustration.

8. On the third section, have students label a *P* in the corner for *predict* and draw an arrow pointed to the right, indicating the future. Have students make a prediction about what will happen to the moon over 16 days. Will it be in the same spot? Will it look the same every night?

9. For the last section, instruct students to label an *H* in the corner and draw three short, parallel lines like a list. The *H* stands for what *happens*.

10. Distribute the drawing paper to students. Have students fold the paper vertically in half and in half again. Again, have students fold the paper horizontally in half and in half again. Students should have 16 boxes total. Model how to number each box in the upper left-hand corner.

11. Ask students to take a look at the moon each night for the next 16 nights. You may choose to take a picture each night and share with the class. Have students illustrate how the moon looks each night with its corresponding numbered box.

12. After 16 days, have students revisit their *WPH Accordions* and record any observations they have made over the 16 days of the moon.

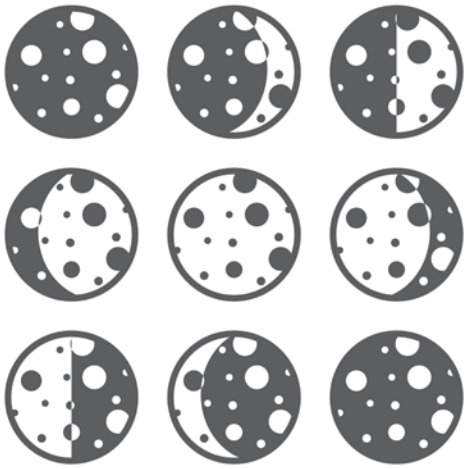
Evaluate/Create

13. Have students review their predictions and evaluate what actually happened. Reinforce to students that it is fine if their predictions did not perfectly match what actually happened.

14. Have students continue to observe the moon for another 16 days, if they wish, or share pictures of the moon over months and have them identify a pattern. They should notice a full moon versus half moon, gibbous, etc.

15. Distribute writing paper to students. Ask students to write two sentences about the differences between their predictions and the actual results. Ask students questions such as:

- Why was this observation more difficult in finding patterns than the floor tile?
- What did they have to do to notice the patterns?
- Were their predictions right?
- Did they notice any unexpected patterns?



Early Settlers

Brain-Powered Strategy

WPH Accordion

Standard

Knows ways in which early explorers and settlers adapted to, used, and changed the environment of the state or region

Vocabulary Words

- develop
- environment
- explorers
- region
- settlers

Materials

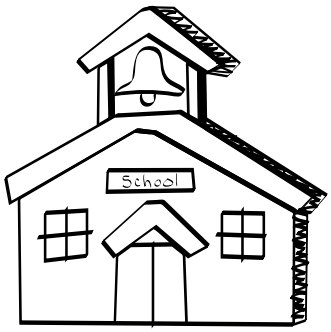
- *Our Effects* (page 148)
- photograph from long ago of the area where your school is located
- nonfiction book about early settlers or social studies textbook
- half-sheets of paper (cut horizontally)
- writing paper

Preparation Note: Prior to the lesson, review the text you will read to students about early settlers and determine an appropriate place to stop to have students make predictions.

Procedures

Model

1. Display a photograph from long ago of the area where your school is located.
2. Discuss with students how the area has changed and developed. What was there long ago? What is there now? What is still the same?
3. Explain to students that long ago, people settled in different areas of the country.
4. Read to or with students a book or parts of several texts about the settlers—where they came from, why they left, where they settled, and what the land looked like before they came.
5. Tell students that they will be doing a strategy called *WPH Accordion*. (For detailed information on this strategy, see page 18.)
6. Avoid reading about the effects the settlers had on the land until after students have completed the first portion of the *WPH Accordion* strategy.



Early Settlers *(cont.)*

Apply/Analyze

7. Distribute half-sheets of paper cut lengthwise to students. Instruct students to fold the paper in half and then in half again to create four equal sections. Then, have students bend the first crease back, the second crease forward, and so on, in order to create an accordion effect.

8. Instruct students to turn the closed paper so that the first fold is at the top. While keeping the paper closed to the other sections, have students write or draw a title such as *Early Settlers*.

9. On the second section, have students label a *W* in the corner for *who* is involved and a small face as a symbol for *who*. Have students write who is involved in the topic of early settlers. Students can name specific settlers you have read about or a more general topic such as *early settlers*.

10. On the third section, have students label a *P* in the corner for *predict* and draw an arrow pointed to the right, indicating the future. Have students make a prediction about how the settlers used, adapted to, or changed the land they settled on.

11. For the last section, instruct students to label an *H* in the corner and three short, parallel lines like a list. The *H* stands for what *happens*.

12. Continue reading from the book or textbook to explain what happened as a result of the early settlers. Have students record what actually happened in the last section.

Evaluate/Create

13. Divide students into pairs. Distribute an *Our Effects* activity sheet (page 148) to each pair. Select for students one aspect of the effects of settlers on the land. Ask students to work together to discuss one effect of the settlers. Have them take notes about why the effect was positive, negative, or neutral.

14. Have the pairs use the notes to write short descriptive paragraphs about the effects and how the effects have impacted life today.

15. Select one student from each pair to share what he or she wrote with the whole class.

Name: _____ Date: _____

Our Effects

Directions: Discuss one effect of the settlers. Write about how the effect was positive, negative, or neutral. Then, use these notes to write a descriptive paragraph on a separate sheet of paper.

Positive Effects
Negative Effects
Neutral Effects

More Than One Way

Brain-Powered Strategy

Reverse, Reverse!

Standard

Fluently add and subtract within 20 using mental strategies

Vocabulary Words

- add
- addend
- subtract
- sum

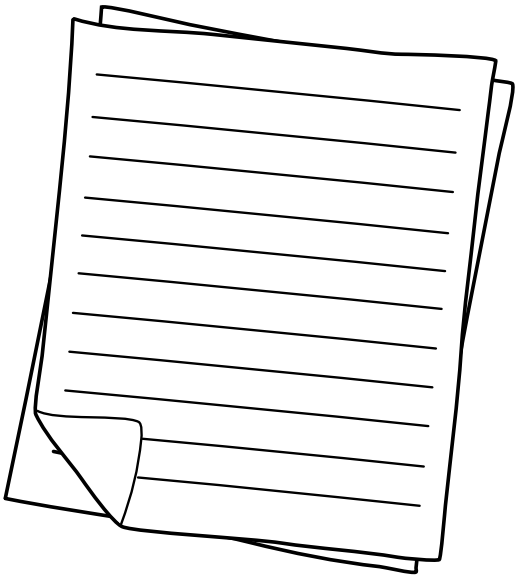
Materials

- *Many Ways* (page 151)
- ten red pieces of construction paper
- ten blue pieces of construction paper
- chart paper

Procedures

Model

1. Choose two students to come to the front of the classroom.
2. Ask the first student to walk to the classroom door. Ask the second student to walk to the door, too, using a different path.
3. Discuss with students the fact that both students got to the door, but they did it different ways.
4. Place colored pieces of construction paper in a place where students can see them.
5. Hold up seven red pieces of paper and three pieces of blue paper. Tell students you can create an equation that tells how many red and how many blue pieces of paper there are. Write the equation *7 + 3 = 10* on the board.
6. Exchange two pieces of red paper for two pieces of blue paper so that you have five red and five blue pieces of paper. Again, write an equation to match the papers you have displayed: *5 + 5 = 10*.
7. Continue modeling and having students make equations to show different ways to make the same sum. Discuss the process with students.



More Than One Way (cont.)

Apply/Analyze

8. Tell students that they will be doing a strategy called *Reverse, Reverse!* (For detailed information on this strategy, see page 19.)

9. Gather students together to form a circle. Select one student to be the judge, or you can be the judge.

10. Name a number (this will be the sum). Students must name two or more numbers that will make the number you named as a sum. Have the first student begin by naming two addends. Continue around the circle in a clockwise direction. The next student says another pair of addends, and so on. If a student cannot think of a pair of addends or repeats a pair of addends already named, reverse the direction so the direction is now counterclockwise. For example, if the number is 46, the first student may say 22 and 24. The following student may say 18 and 28, and so on.

11. As students play, record their ideas on a sheet of chart paper.

12. You can change the sum each time the direction of play is reversed in order to add excitement to the game. Allow students to play using multiple addition, subtraction, or multiplication facts, too. Play continues until a predetermined amount of time or until students cannot think of any more addends.

Evaluate/Create

13. Divide students into pairs. Distribute the *Many Ways* activity sheet (page 151) to each pair of students. Name a number for students to write in the circle in the center of the page. Choose to give each pair the same number or differentiate by giving higher numbers to students who need a challenge and lower numbers to students who need more support.

14. Provide time for students to record as many different addends that will make the sum.

15. Have student pairs compare their two numbers. Ask each pair to identify any ways their numbers are alike and any way their numbers are different. For example, the two numbers may both have 2 tens.

16. Compile all students' activity sheets into a book. Place the book in the classroom library for students to read.

Name: _____ Date: _____

Many Ways

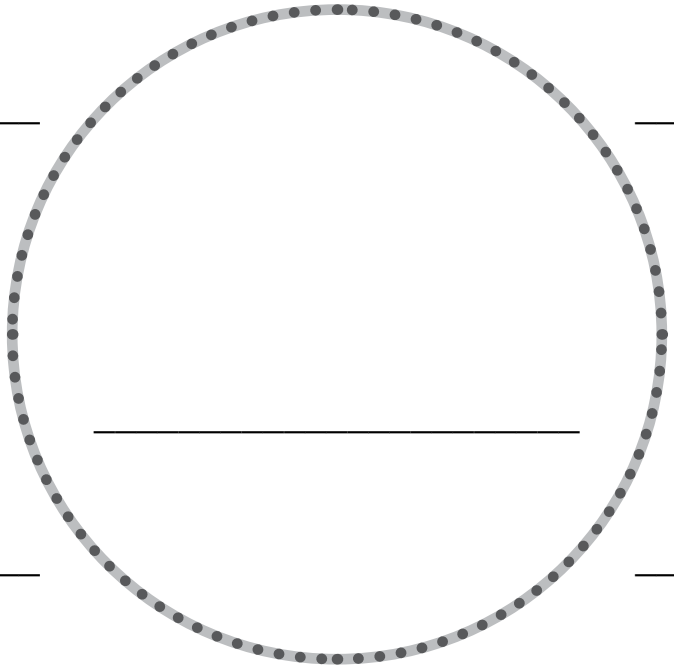
Directions: Write the number your teacher tells you in the center circle. Think of as many pairs of addends as possible to make that sum.

_____

_____ _____

_____

_____ _____



_____

_____ _____

_____

_____ _____

_____

Observable Properties

Brain-Powered Strategy

Reverse, Reverse!

Standard

Knows that different objects are made up of many different materials and have many different observable properties

Vocabulary Words

- observable
- properties

Materials

- *What Do You See?* (page 154)
- object(s) to observe
- chart paper

Procedures

Model

1. Explain that scientists use observation to describe the properties an object has and that being able to describe properties allows them to compare objects, as well.
2. Make a list and discuss some of the ways objects can be observed including:
   - color
   - size
   - shape
   - weight
3. Ask students to look in the room for an object that can be used for the science lesson and activity. Remind students to use their five senses as they observe like a scientist. You may wish to give parameters about where they can search.
4. Gather all the students' objects in one place at the front of the room.
5. Choose one of the objects students gathered and display it so all students can see.
6. Model how to observe the object by describing its properties. Make a list of the properties on the board as you observe them, if desired.
7. Choose another object and have students work together in small groups to practice observing the properties of this object.

Observable Properties *(cont.)*

Apply/Analyze

8. Tell students that they will be doing a strategy called *Reverse, Reverse!* (For detailed information on this strategy, see page 19.)

9. Gather students together to form a circle. Select one student to be the judge, or you can be the judge.

10. Display the object you want students to describe. Have the first student begin by naming an observable property of the object. Continue around the circle in a clockwise direction. The next student says another property, and so on. If a student cannot think of a property or repeats one already named, reverse the direction so the direction is now counterclockwise.

11. As students play, record their ideas on a sheet of chart paper.

12. You can change the object each time the direction of play is reversed in order to add excitement to the game. Play continues until a predetermined amount of time or until students cannot think of any more properties.

Evaluate/Create

13. Distribute the *What Do You See?* activity sheet (page 154) to students.

14. Have students observe and describe an object. Allow them to choose their own object, or provide a specific object for them. Students can record their ideas on their activity sheets.

15. Divide students into pairs. Have them compare their completed activity sheets. Ask students to identify any properties their objects have that are the same and any ways their objects are different. Allow students to change partners and repeat the step with their new partners.

16. Ask students if they were to create the coolest object or combine multiple objects, how would they do that? What properties would it contain? What materials would they use? Have them explain what they created, identify the properties, and share why they chose what they chose. Is their object helpful to someone? Does it solve a problem?

Name: _____ Date: _____

What Do You See?

Directions: Choose an object to observe. Describe the properties by considering the categories below.

Name of Object:	
Picture	
Color	**Size**
Shape	**Weight**
Other	

Celebrate!

Brain-Powered Strategy

Reverse, Reverse!

Standard

Knows the holidays and ceremonies of different societies

Vocabulary Words

- celebration
- ceremony
- holiday
- tradition

Materials

- *Celebrate Recording Sheet* (page 157)
- book on a holiday or ceremony (e.g., *Chinese New Year* by David Marx)
- chart paper

Procedures

Model

1. Display the cover of the book. Read the title and author's name. Discuss the illustration or photograph on the cover.
2. Read the book to students, stopping throughout the book to discuss the contents.
3. Write the name of the holiday or ceremony being studied in the center of the sheet of chart paper. Draw a circle around it.
4. Ask students to share what they know about the holiday or ceremony. Provide time for students to think and then share their knowledge with a partner.
5. Have students share their ideas. Record the ideas on the chart paper by making a web coming out from the central circle.
6. Walk back through the book with students by looking at the pictures on each page to determine if any additional information needs to be added to the chart.

Apply/Analyze

7. Tell students that they will be doing a strategy called *Reverse, Reverse!* (For detailed information on this strategy, see page 19.)
8. Gather students together to form a circle. Select one student to be the judge, or you can be the judge.
9. Remind students of the holiday or celebration. Have the first student begin by naming a fact about it. Continue around the circle in a clockwise direction. The next student says another fact. If a student cannot think of a fact or repeats a fact already named, reverse the direction so the direction is now counterclockwise.
10. Determine if you want to leave the chart paper the class created together on display or if you want to remove it.
11. If students have been studying several different holidays or celebrations, you can change the holiday or celebration each time the direction of play is reversed in order to add excitement to the game.

Celebrate! *(cont.)*

12. Play continues until a predetermined amount of time or until students cannot think of any more facts.

Evaluate/Create

13. Distribute the *Celebrate Recording Sheet* activity sheet (page 157) to students.

14. Assign a holiday or a ceremony you wish students to complete the recording sheet for. Provide time for students to complete the activity sheet.

15. Have each student choose a favorite holiday he or she celebrates or a ceremony he or she participates in with his or her family. Ask students to determine one thing that is the same and one thing that is different about their favorite holidays or celebrations with the one they wrote about on the activity sheet. Ask students to share with partners. Then, have several students share their findings with the class.

16. Ask students if they could create their own holidays or celebrations, what would they be and why would they be celebrated?

Name: _____ Date: _____

Celebrate Recording Sheet

Directions: Record what you know about the holiday or ceremony you have been studying.

Holiday or Celebration	**Who**
What	**When**
Where	**Why**
How	

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Contents of the Digital Resource CD

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