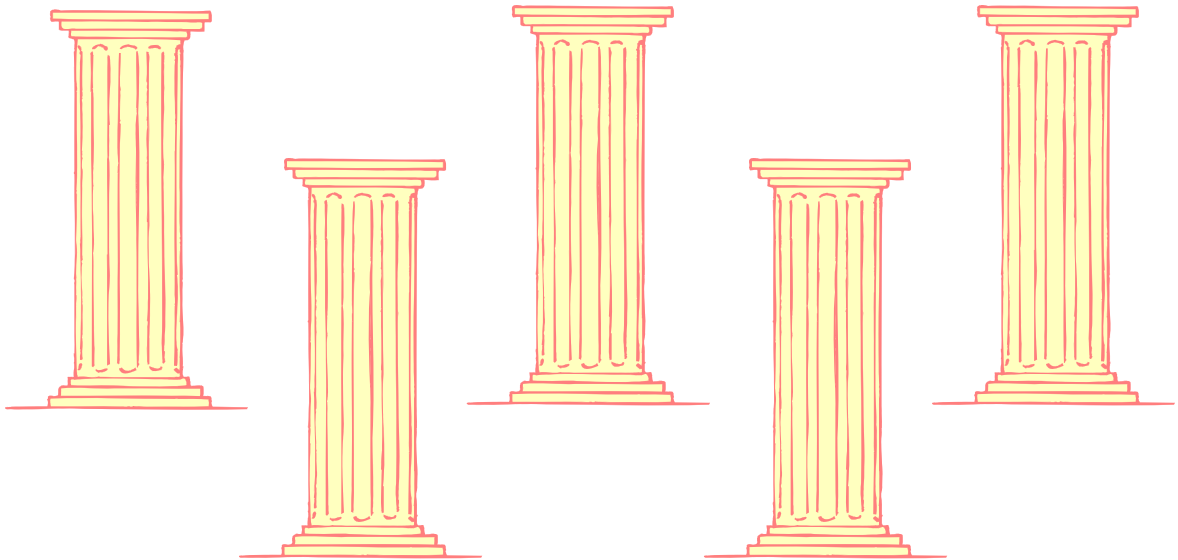


Compare and Contrast: A Sample Lesson

Module 3 Handout #2



Compare & Contrast: A Sample Lesson

Different Times, Different Households

Stop and think about some families that you know. Have you ever noticed how some households are different than your own? Take a moment and jot down some ways households are different from each other and from your own household.

	<i>How Households are Similar and Different</i>
○	
○	
○	

In this lesson, we are going to go back into the 17th and 19th Centuries, where you will have the opportunity to visit two homes. The first passage you will read is taken from a father’s diary and the second passage is from a 19th-Century song. As you visit these homes, pay close attention to the following criteria: the father’s duties, the daughter’s duties, the nature of the world, and the nature of the home.

Following the passages are two boxes for notes on each passage and a visual organizer to help guide you through your comparison.

READING ONE

A 17th-Century Father Talks to his Daughter*

Recognizing that I, like all men, will one day perish, I invited my daughter, little Katy, into my study. I told my child that I am to die shortly, and she must, when I am dead, remember everything that I said unto her. I set before her the sinful and woeful condition of her nature, and I charged her to pray in secret places every day without ceasing that God for the sake of Jesus Christ would give her a new heart. I wished her to live happily under God and abide by the laws governing her existence here. I gave her to understand that when I am taken from her she must look to meet with more humbling afflictions than she does now (when) she has a careful and tender father to provide for her.

READING TWO

Father Is Coming (19th-Century Song)

The clock is on the stroke of six,
The father's work is done.
Sweep up the hearth and tend the fire,
And put the kettle on.

The wild night-wind is blowing cold,
'Tis dreary crossing o'er the world.

He's crossing o'er the world apace,
He's stronger than the storm;
He does not feel the cold, not he,
His heart it is so warm;
For father's heart is stout and true
As ever human bosom knew . . .

Nay, do not close the shutters, child;
For along the lane
The little window looks, and he
Can see it shining plain.
I've heard him say he loves to mark
The cheerful firelight through the dark.

Hark! Hark! I hear his footsteps now;
He's through the garden gate.
Run, little Bess, and open the door,
And do not let him wait.
Shout, baby, shout! and clap thy hands,
For father on the threshold stands.

*Original comparison by John Demos in his book *Past, Present, and Personal*.

Description Phase

Your Thoughts

17th Century

19th Century

Father's
Role

Daughter's
Role

Nature of
the home

Nature of
the world

Comparison Phase

Your Thoughts

Similarities

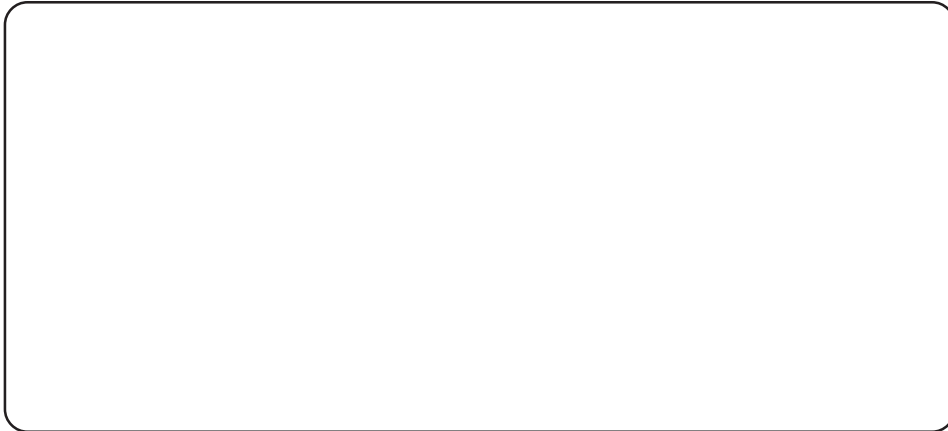
17th-Century
Differences

19th-Century
Differences

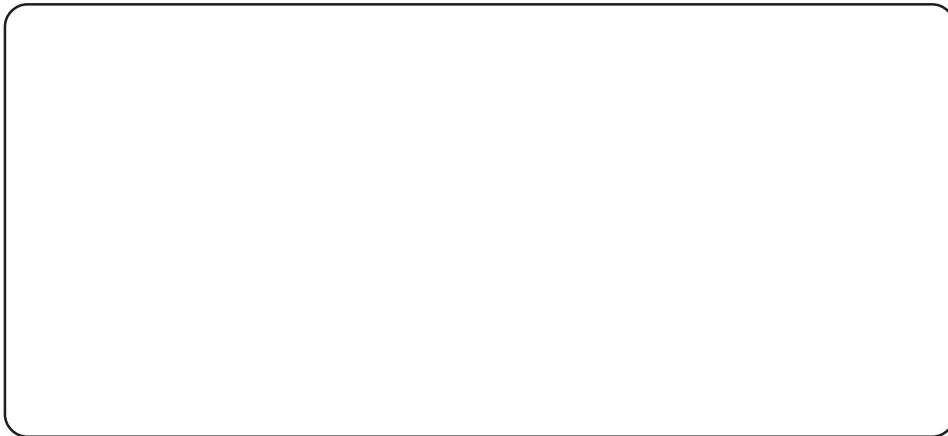
Conclusion Phase

Your Thoughts

1. Are the two homes more alike or different? Explain your response.



2. What do you suspect to be some of the causes for differences between the homes?



3. What generalizations can you make about the roles of fathers and daughters from these examples? About families?

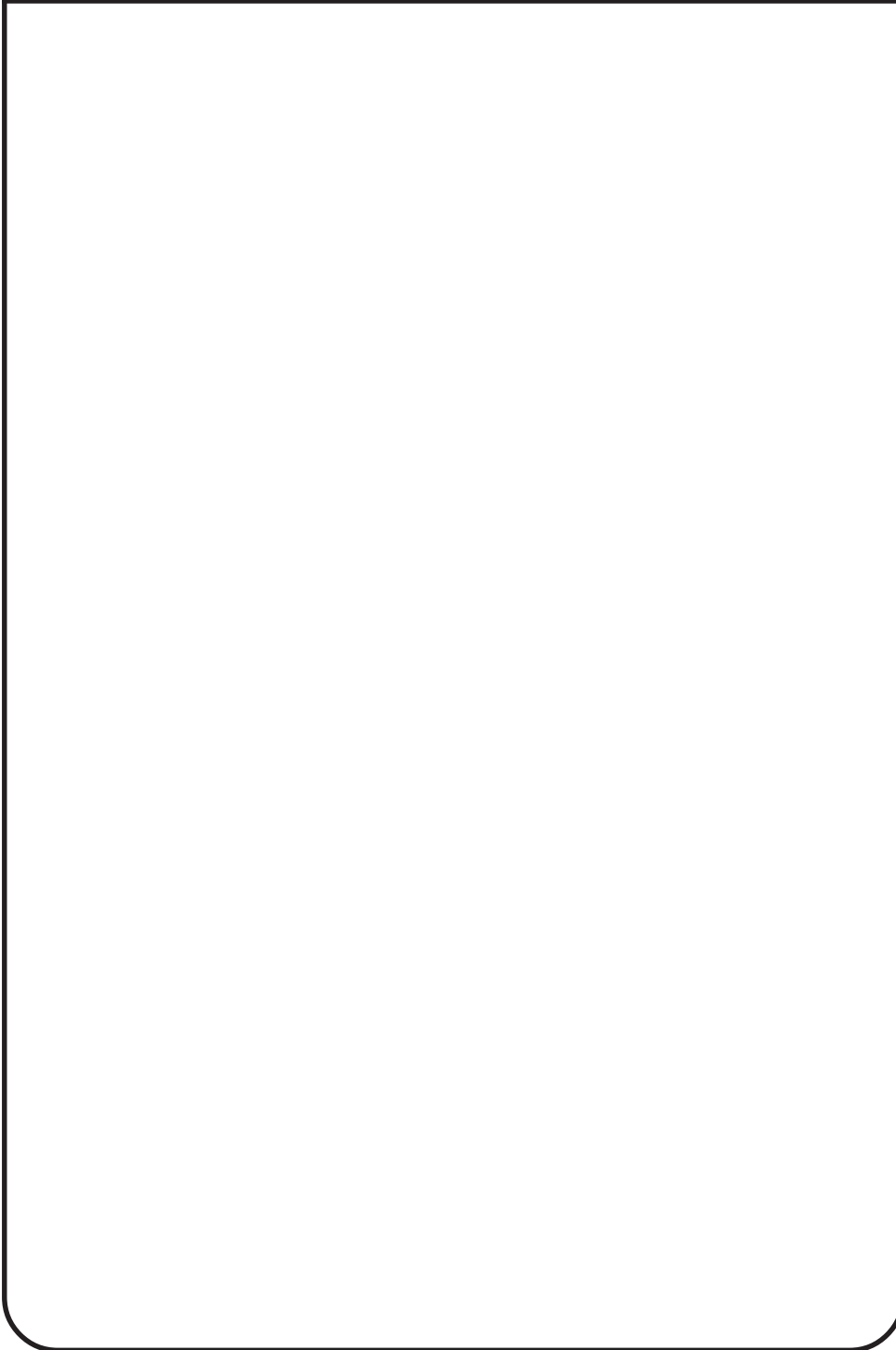


Application Phase

Your Thoughts

Create a want ad for a 21st-Century father. Make sure you include responsibilities and benefits in your ad. When you are finished, you will present your product to the other participants in the workshop.

Want Ads



Compare and Contrast in Math

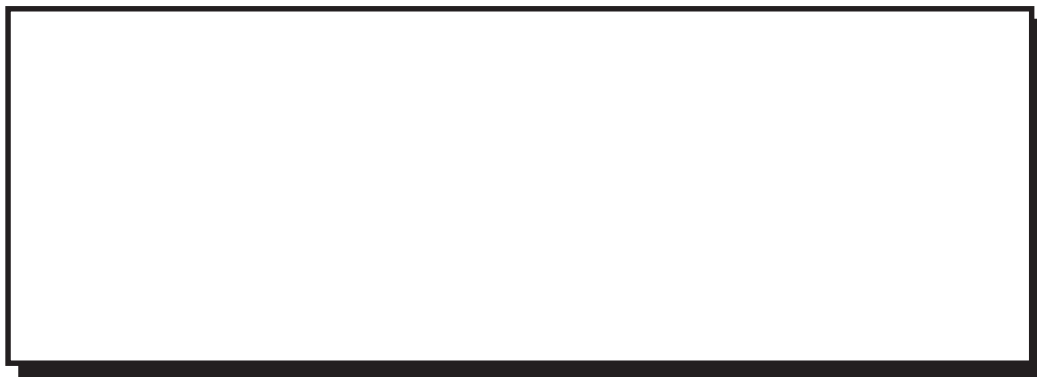
Your Thoughts

Purpose: To help students improve their mathematical problem-solving skills by learning to read word problems carefully and analytically.

Hooking the Students' Interest

It turns out that the biggest problem students face in solving word problems is not in making careless errors, but rather in rushing to solve problems before they really understand what the problem is asking for. Think of your own experiences with word problems.

Why do you think so many students rush to solutions?



Today we are going to do two things. First, we are going to introduce a new kind of word problem, namely, time-distance-rate problems. Second, we are going to use a strategy called Compare and Contrast to help us learn how to read word problems more analytically, so that we know exactly what the problem is asking us to do before we try to solve it.

Description Phase

Here are two word problems. Using the organizer on the next page, describe what each problem is asking you to do. Draw a diagram showing each problem situation. Then, solve the problem, showing both the work and the thinking you used to solve the problem.

Problem 1: Samuel is running late for a meeting in Cortville, which is 40 miles down Route 27. Samuel is supposed to be to his meeting by 4:00. It is now 3:15. The speed limit on Rt. 27 is 35 miles per hour. If Samuel drives exactly 35 miles per hour, how late will he be?

Problem 1: Samuel is running late again. This time, his meeting is down Breward Skyway. The meeting is 40 miles away and it's now 3:15. If Samuel needs to be at the meeting by 4:00, how fast will he have to drive?

Next, team up with a partner and share your work and solutions. Describe each problem using the criteria listed on the organizer below.

Your Thoughts

	Problem 1	Problem 2
How is the problem written (What needs to be found out?)		
What does the diagram look like?		
What is the answer to the problem?		
How did you go about solving the problem? (Describe your thinking process)		

Comparison Phase

Next, compare the two problems. Using the criteria from the Description Phase, complete the comparison organizer below.

Your Thoughts

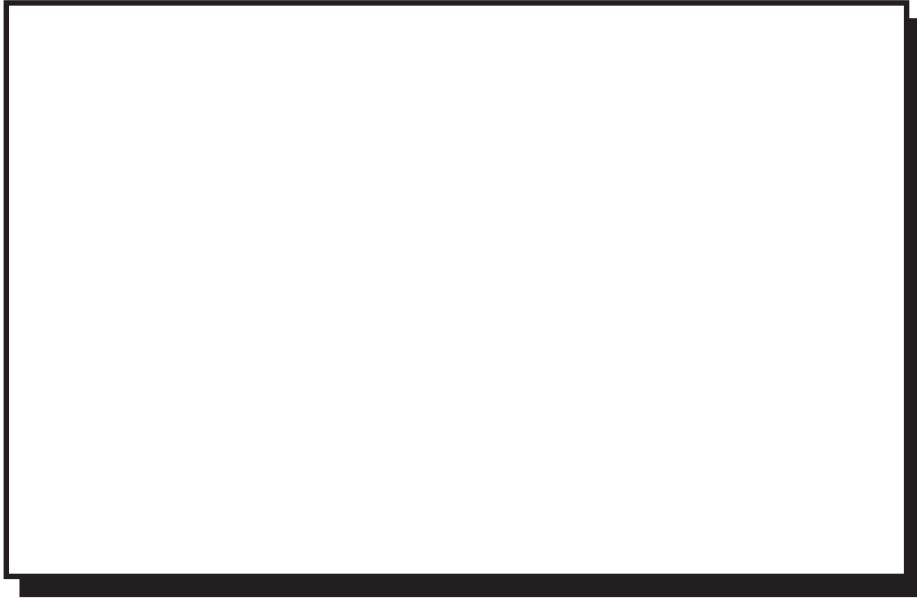
**How is Problem 1
different from
Problem 2?**

**How is Problem 2
different from
Problem 1?**

How are the problems similar?

Conclusion Phase

With your partner, develop a brief that explains your findings. Be sure to discuss what causes the differences in the approach you take going about solving each type of problem.



Application Phase

To show what you know, create two problems like Problem 1 and two problems like Problem 2. Then, since we noticed that Problem 1 asks you to solve for *time* and Problem 2 asks you to solve for *rate*, create two more problems that are looking for you to solve for *distance*.



Your Thoughts

Planning a Compare and Contrast Lesson: Four Easy Steps

Your Thoughts

Now that you have analyzed and discussed some content-specific lessons with your group, you are ready to plan a lesson of your own. Planning a Compare and Contrast lesson involves four steps. Below you will find each of these four steps described along with a brief explanation designed to help you with each step. After the steps, you will find a one-page worksheet that will allow you to plan the strategy for your classroom.

Step 1: IDENTIFY YOUR TOPIC

The Compare and Contrast Strategy relies on the juxtaposition of two terms, ideas, or concepts. When selecting topics for this strategy, pick terms or ideas that will naturally heighten understanding when considered together. For example, if your initial concept is amphibians, you would probably want to select reptiles as the other. Of the five vertebrate families--mammals, birds, fish, amphibians, and reptiles--the latter two are generally the most confused and, therefore the best candidates for comparison. In mathematics, the strategy serves to help students see important patterns in the solution process by comparing different equations or theorems.

The strategy also works wonderfully with pieces of difficult or thematically dense text. In an English class, questions of genre, meaning, theme, style, social issues, etc. make for fruitful comparisons. For example, using a poem by Walt Whitman and another by Emily Dickinson raises fertile discussion and explication sessions on style, gender, social contexts, etc.

In the humanities and social sciences, two pieces of text can be used to examine any number of issues, provided that the reading selections complement each other. This means there must be clear similarities and differences between the readings. For example, a history teacher who wanted her students to explore the opinions of Europeans about Native Americans during early colonization and conquest gave her students two authentic readings: diary entries from the explorer Cortez and firsthand accounts from a missionary. She asked her students to explore the attitudes toward native peoples and to consider possible reasons for these attitudes.

Step 2: IDENTIFY THE PURPOSE FOR THE COMPARISON

Students are more likely to respond to the lesson if they understand why they are doing it and what the benefits may be. For this reason, you should provide a clear purpose for the comparison before the students begin working.

Examples:

"People often confuse bacteria with cyanophytes. Let's compare them to make sure we're clear about how they are similar and how they are different."

"We have read two of Shakespeare's tragedies, *Hamlet* and *Macbeth*. Let's compare the two tragic heroes to see how Shakespeare makes his characters both unique and universal."

"The method for figuring out percentages is sometimes easy to forget. If we compare two different percentage problems, we may be able to better see patterns in the solution process."

Step 3: SELECT THE CRITERIA FOR COMPARISON

Established criteria guide the students through the lesson. By giving students clearly defined points to look for, you will help them focus their analyses and will keep the exploration of the material aligned with the pertinent and content-rich areas of the lesson.

Examples of well-established criteria:

- 1) Sedimentary vs. metamorphic rocks
 - a) What are the characteristics?
 - b) What kinds exist?
 - c) How are they formed?

- 2) Percentage problems
 - a) What is the unknown?
 - b) What is the equation?
 - c) What is the solution?

- 3) The North and South during the Civil War
 - a) Type of social structure
 - b) Role of slavery
 - c) Popular attitudes

Step 4: DEVELOP A SYNTHESIS TASK

The point of the task, of course, is to give students the opportunity to demonstrate what they have learned and to apply their insights from the lesson. A wide variety of task types is possible, from writing a poem, to creating a series of word problems, to assuming the role of a famous general and writing a letter from his perspective. Whatever you do to ask students to apply their learning, make sure the task ties the learning sequence together and will engage students' interest.

Your Thoughts

Bringing Our Thoughts Home to the Classroom

Your Thoughts

Think about the planning of the Compare and Contrast strategy. Using the organizer below, work with a colleague to design a plan for using this strategy in your classroom.

Activity Twelve: Planning a Lesson

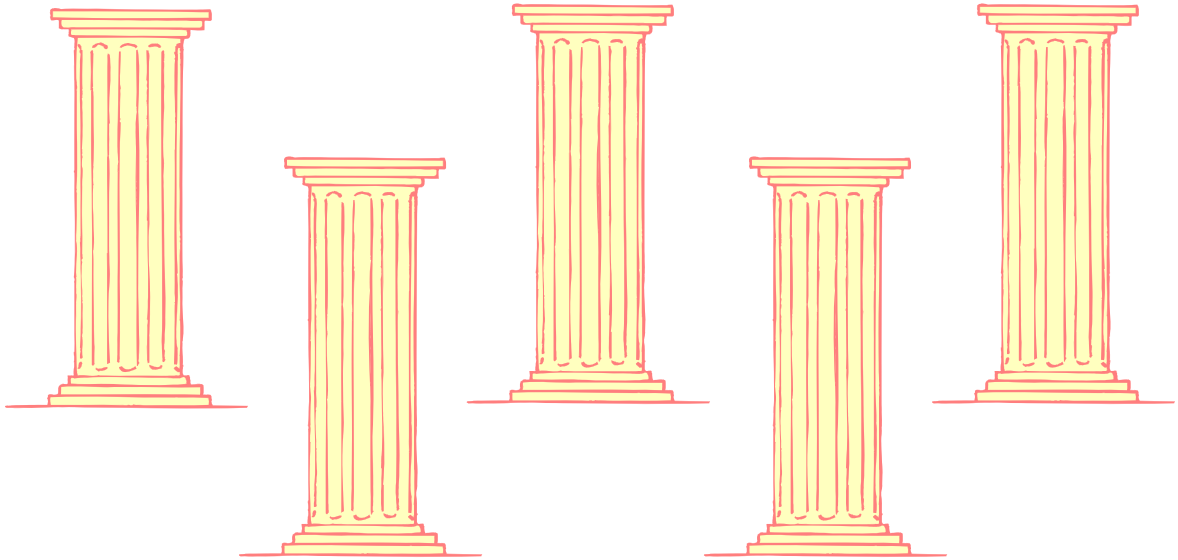
Step 1: IDENTIFY YOUR TOPIC

Step 2: IDENTIFY THE PURPOSE FOR THE COMPARISON

Step 3: SELECT THE CRITERIA FOR COMPARISON

Step 4: DEVELOP A SYNTHESIS TASK

Sample Lessons



Sample Lesson #1: Elementary School Science

Figure 2.1

PHASES	EXAMPLE
<p>1. Description: Students observe and describe each item separately.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • What is the purpose for this comparison? • What sources of information will my students use? • How will I help students identify the criteria they need to focus their description? 	<p>1. Claire Hoffman teaches 3rd grade and is about to begin a unit on The Stages of Life. Claire wants her students to understand the important concept: form follows function. She has students compare and contrast a shoe box and a glass jar with a lid. Before she begins her comparison, however, she helps her students identify the criteria for their comparison using a mystery object. She holds up a shoe box and tells her students that inside there is a mystery object. The students and teacher brainstorm a list of possible mystery items. The students must ask her questions to determine what the object is. As the students ask their questions, Claire helps students convert their questions into criteria for comparing the two containers. Some of the criteria they come up with include: size, shape, function, and material.</p>
<p>2. Comparison: Students use a visual organizer to identify similarities and differences between items.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • What sort of visual organizer will students use to record their comparisons? 	<p>2. Claire then has her students describe the shoe box and glass jar in detail, and compare them using a “Y” organizer.</p>
<p>3. Conclusion: Students discuss the relationship between items.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • Design a discussion that will help students draw conclusions. • Are the items more alike or different? • What causes the differences and similarities between the items? 	<p>3. In small groups the students discuss the differences between the two containers. Claire asks her students to select two differences and, based on those differences, explain why the two objects were designed differently.</p>
<p>4. Application: Students apply what they have learned through the comparison.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • Create a task that will help students synthesize their learning. 	<p>4. For a synthesis task Claire presents students with a problem to solve. She explains that Mrs. Wing at the local farm wants to hire her students to design a new egg container, because too many of her eggs are breaking on route to the store. Using what they have learned about containers and their design, Claire has her students design an egg carton that will help Mrs. Wing with her problem.</p>

Sample Lesson #2: Elementary School Math

Figure 2.6

PHASES	EXAMPLES		
<p>1. Description: Students observe and describe each item separately.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • What is the purpose for this comparison? • What sources of information will my students use? • How will I help students identify the criteria they need to focus their description? 	<p>1. Maggie Bishop has noticed that her 4th grade students are confused by the word “more” in simple math word problems, so she creates a compare and contrast lesson to help them understand how to correctly interpret math word problems. She creates two word problems that use the word “more” in different ways. Maggie asks her class to describe both problems in terms of who has more, who has less, what needs to be found, and how to solve the problems.</p>		
<p>2. Comparison: Students use a visual organizer to identify similarities and differences between items.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • What sort of visual organizer will students use to record their comparisons? 	<p>2. Next Maggie asks her students to compare the two problems, with a partner, using a top-hat organizer.</p> <table border="1" data-bbox="906 821 1481 1014"> <tr> <td data-bbox="906 821 1195 1014">Peter has more in this problem and it asks you to use addition to solve it.</td> <td data-bbox="1195 821 1481 1014">Tyson has more in this problem and it asks you to use subtraction to solve it.</td> </tr> </table> <p data-bbox="906 1020 1481 1108">Both problems ask how much Peter has and both use the word “more.”</p>	Peter has more in this problem and it asks you to use addition to solve it.	Tyson has more in this problem and it asks you to use subtraction to solve it.
Peter has more in this problem and it asks you to use addition to solve it.	Tyson has more in this problem and it asks you to use subtraction to solve it.		
<p>3. Conclusion: Students discuss the relationship between items.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • Design a discussion that will help students draw conclusions. • Are the items more alike or different? • What causes the differences and similarities between the items? 	<p>3. When the class reconvenes they discuss whether the problems are more alike or different and how key words in the problem such as “more” cue them in on how to solve the problem.</p>		
<p>4. Application: Students apply what they have learned through the comparison.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • Create a task that will help students synthesize their learning. 	<p>4. Maggie then gives her students four more problems with the word “more” taken directly from a challenging section of the state assessment test. The students check their answers in pairs. Finally, Maggie has her students create two word problems of their own using the word “more.” One problem must use subtraction to be solved and one must use addition.</p>		

Sample Lesson #3: Middle School Art

Figure 2.11

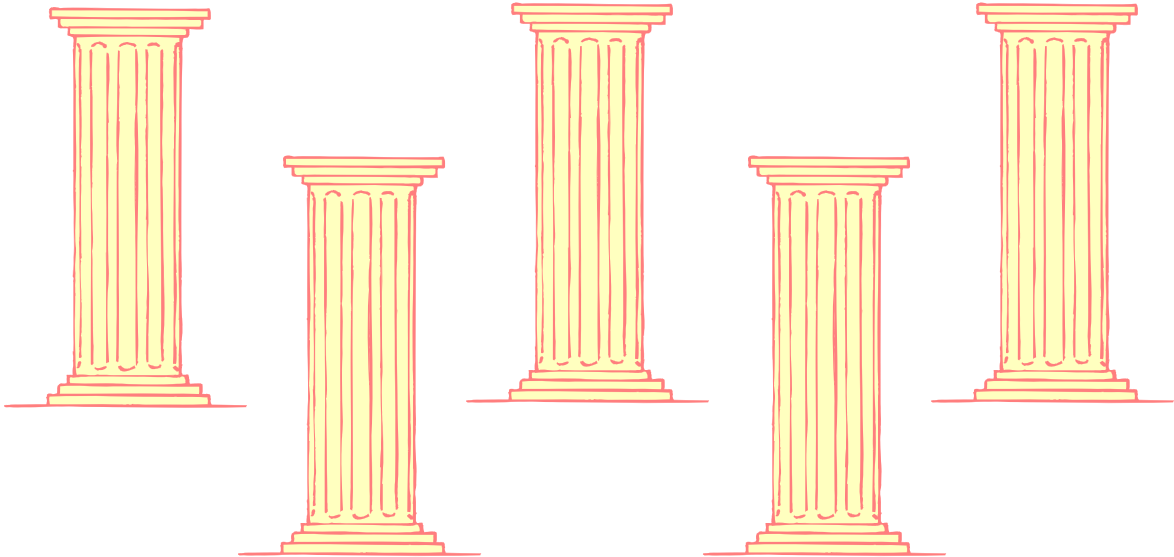
PHASES	EXAMPLE		
<p>1. Description: Students observe and describe each item separately.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • What is the purpose for this comparison? • What sources of information will my students use? • How will I help students identify the criteria they need to focus their description? 	<p>1. Steven Gershwin teaches middle school art. He is introducing a 5th grade class to print making. He wants his students to understand what the different kinds of printing are and what similarities and differences they share. First, he explains how etchings and wood cuts are made. Next, Steven presents his students with two black and white prints. One of the prints is Emil Nolde's <i>Prophet</i>; a wood cut. The other print is an etching by Pablo Picasso called <i>Sculptor With His Model, His Sculpture, and a Bowl of Anemones</i>. Students are asked to describe prints based on what is depicted, what the lines look like, and how they think the prints were made.</p>		
<p>2. Comparison: Students use a visual organizer to identify similarities and differences between items.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • What sort of visual organizer will students use to record their comparisons? 	<p>2. Based on the same criteria, the students contrast the two prints focusing on the differences and the causes for those differences.</p> <table border="1" data-bbox="857 982 1425 1171"> <tr> <td data-bbox="857 982 1144 1171"> <p>Nolde's Prophet Primarily black. Lines are thick and sharp. Image is obscure. Few lines.</p> </td> <td data-bbox="1144 982 1425 1171"> <p>Picasso's Sculptor... Primarily white. Lines are curvy. High detail. Image is clear. Looks like a drawing.</p> </td> </tr> </table>	<p>Nolde's Prophet Primarily black. Lines are thick and sharp. Image is obscure. Few lines.</p>	<p>Picasso's Sculptor... Primarily white. Lines are curvy. High detail. Image is clear. Looks like a drawing.</p>
<p>Nolde's Prophet Primarily black. Lines are thick and sharp. Image is obscure. Few lines.</p>	<p>Picasso's Sculptor... Primarily white. Lines are curvy. High detail. Image is clear. Looks like a drawing.</p>		
<p>3. Conclusion: Students discuss the relationship between items.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • Design a discussion that will help students draw conclusions. • Are the items more alike or different? • What causes the differences and similarities between the items? 	<p>3. Afterwards, students return to the group and discuss how the prints were made. Their guess is that based on the width of the lines Picasso's print is the etching and Nolde's is the wood cut.</p>		
<p>4. Application: Students apply what they have learned through the comparison.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • Create a task that will help students synthesize their learning. 	<p>4. Steven shows examples of both print plates, and the students decide which kind of print they want to make. When students have finished their plates, Steven prints them. The students compare their work to the masters' as well as to each other's work.</p>		

Sample Lesson #4: High School American History

Figure 2.16

PHASES	EXAMPLE												
<p>1. Description: Students observe and describe each item separately.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • What is the purpose for this comparison? • What sources of information will my students use? • How will I help students identify the criteria they need to focus their description? 	<p>1. Charles Lester’s 9th grade American History class is starting a unit on the Civil Rights Movement. He wants his students to understand that the feelings underlying the movement were not limited to hostility. He hands out three poems: “We Wear the Mask” by Paul Lawrence Dunbar; “If We Must Die” by Claude McKay; and, “A Theme for English B” by Langston Hughes. He has the students read the poems aloud, and asks them to describe the mood of each poem in their learning groups. They discuss what the themes might be, whether they have felt the emotions portrayed, and when they might have been written.</p>												
<p>2. Comparison: Students use a visual organizer to identify similarities and differences between items.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • What sort of visual organizer will students use to record their comparisons? 	<p>2. Next Mr. Lester has his students try to put the poems in chronological order, and, using a compare and contrast matrix, explain why they put them in the order that they did.</p> <table border="1" data-bbox="909 1045 1481 1325"> <thead> <tr> <th>1st</th> <th>2nd</th> <th>3rd</th> <th></th> </tr> </thead> <tbody> <tr> <td>Theme for English B</td> <td>We Wear the Mask</td> <td>If We Must Die</td> <td>What’s Similar?</td> </tr> <tr> <td>I thought this came first because...</td> <td>I thought this came second because...</td> <td>I thought this came last because...</td> <td>They are all about resistance.</td> </tr> </tbody> </table>	1st	2nd	3rd		Theme for English B	We Wear the Mask	If We Must Die	What’s Similar?	I thought this came first because...	I thought this came second because...	I thought this came last because...	They are all about resistance.
1st	2nd	3rd											
Theme for English B	We Wear the Mask	If We Must Die	What’s Similar?										
I thought this came first because...	I thought this came second because...	I thought this came last because...	They are all about resistance.										
<p>3. Conclusion: Students discuss the relationship between items.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • Design a discussion that will help students draw conclusions. • Are the items more alike or different? • What causes the differences and similarities between the items? 	<p>3. Mr. Lester engages the students in conversation. They discuss the similarities and differences between the poems and then he tells them the real chronological order.</p>												
<p>4. Application: Students apply what they have learned through the comparison.</p> <p><i>Teacher Planning:</i></p> <ul style="list-style-type: none"> • Create a task that will help students synthesize their learning. 	<p>4. Mr. Lester hands out a second matrix which has the dates of each poem on it and space for notes. He tells his students to comment on why this order also makes sense. Finally, Mr. Lester has his students write their own poem that reflects the times they live in.</p>												

Appendix



Q-SPACE

Purpose: This set of behaviors, adapted from the work of Strong, Hanson, and Silver (1995), is used when responding to students' answers and will increase the depth of students' thought.

Procedure: The way in which teachers receive and respond to students' answers plays an important role in determining the depth and type of thinking that follows. Once a student has responded to a question, the teacher can do one of three things: withhold response, ask further questions, or make a statement. By consciously weaving these options together, the teacher can create a Questioning-Space (Q-SPACE) that can be used to deepen and strengthen student thinking. Q-SPACE consists of the following components:

COMPONENTS:

Question: The quest is a journey or exploration of content initiated by the posing of a focus question.

Silence and wait time: Students need time to think prior to responding, while responding, and following a response. The teacher should wait at least 5 seconds and maintain eye contact before responding. Depending on the type of questions and the thinking required, up to 15 seconds of wait time may be appropriate.

Probing: Responding to an answer with another question or request forces students to explain or support their response and will expose as much of the students' thinking as possible.

- *What evidence do you have to support that idea?*
- *Explain how you came to that conclusion.*
- *What do you mean by _____?*

Accepting: Accepting all answers without judging them is important. If answers are considered provisional, then all answers have the potential for being acceptable. Provisional acceptance of thinking and of communicating the thinking is important.

- *I see.*
- *That's possible.*
- *Let me record your ideas.*

Physical Barometer

Purpose: A technique for assessing students' positions quickly and for having students participate physically in the lesson.

Procedure: The teacher designates specific areas in the classroom to represent various positions (e.g., strongly agree, agree, neutral, disagree, and strongly disagree). The teacher then makes a statement or poses a question like: *Should animal testing be allowed in scientific research?*

The students think about the statement or question, get up from their seats, and move to the part of the room that reflects their position or answer. The students first discuss the reasons for their choice with other students who have taken the same position. They then explain their position to the rest of the class. The groups can ask questions of each other. After the question and answer period, the students are asked to reflect again and then to take a final position (either stay where they are or move). Students who choose to move should be prepared to explain why they moved. Often, a writing activity follows.

STEPS:

1. The teacher designates areas of the room to represent distinct positions/responses to a question.
2. The teacher poses a question or makes a statement.
3. Students reflect on the issue or question, take a position, and move to the appropriate region of the classroom.
4. Students discuss the rationale for their position with others who have the same position.
5. Students in each group explain/defend their position to the rest of the class.
6. Students reflect on their choice and ask questions of each other.
7. Students take a final position and defend their choice either verbally, or more commonly, in writing.