

The background of the cover is a solid light blue color. On the left side, there are several overlapping, glowing white lines that form a complex, organic pattern, resembling a stylized DNA helix or a series of interlocking loops. These lines are thicker in some areas and fade out towards the right.

STRATEGIES THAT APPEAR IN  
ALL TYPES OF LESSONS

# Reviewing Content

THE **MARZANO COMPENDIUM** OF  
INSTRUCTIONAL STRATEGIES



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# CONTENTS

INTRODUCTION .....	1
REVIEWING CONTENT .....	2
STRATEGIES.....	4
Cumulative Review .....	5
Cloze Activities .....	6
Summaries.....	7
Presented Problems .....	9
Demonstrations.....	11
Brief Practice Test or Exercise .....	13
Questioning.....	15
Give One, Get One.....	17
REPRODUCIBLES .....	18

# INTRODUCTION

In 2007, Dr. Robert J. Marzano published *The Art and Science of Teaching: A Comprehensive Framework for Effective Instruction*. The framework, composed of three lesson segments, ten design questions, and forty-one elements, was based on research showing that teacher quality is one of the strongest influences on student achievement—that is, an effective teacher can positively and significantly impact student learning. As such, *The Art and Science of Teaching* sought to identify specific action steps teachers could take to improve their effectiveness.

In 2015, Dr. Marzano updated *The Art and Science of Teaching* framework to reflect new insights and feedback. The Marzano Compendium of Instructional Strategies is based on this updated model, presenting forty-three elements of effective teaching in ten categories. Each folio in the series addresses one element and includes strategies, examples, and reproducible resources. The Compendium and its folios are designed to help teachers increase their effectiveness by focusing on professional growth. To that end, each folio includes a scoring scale teachers can use to determine their proficiency with the element, as well as numerous strategies that teachers can use to enact the element in their classrooms. Indeed, the bulk of each folio consists of these strategies and reproducibles for implementing and monitoring them, making the Compendium a practical, actionable resource for teachers, instructional coaches, teacher mentors, and administrators.

# REVIEWING CONTENT

This element involves the teacher engaging students in a brief review of content that highlights the critical information. Repeated exposure to information is necessary before it becomes part of a student’s knowledge base. Review activities frequently require students to answer a question, perform a demonstration, or complete a task that requires the use of previously learned information. Many of the strategies in this folio can be used in tandem with the strategies in the folio entitled “Revising Knowledge.”

## Monitoring This Element

There are specific student responses that indicate this element is being effectively implemented. Before trying strategies for the element in the classroom, it is important that the teacher knows how to identify the types of student behaviors that indicate the strategy is producing the desired effects. General behaviors a teacher might look for include the following.

- When asked, students describe the previous content on which the new lesson is based.
- During class activities, students give responses indicating that they recall previous content.

Desired behaviors such as these are listed for each strategy in this element.

Teachers often wonder how their mastery of specific strategies relates to their mastery of the element as a whole. Successful execution of an element does not depend on the use of every strategy within that element. Rather, multiple strategies are presented within each element to provide teachers with diverse options. Each strategy can be an effective means of implementing the goals of the element. If teachers attain success using a particular strategy, it is not always necessary to master the rest of the strategies within the same element. If a particular strategy proves difficult or ineffective, however, teachers are encouraged to experiment with various strategies to find the method that works best for them.

## Scoring Scale

The following scoring scale can help teachers assess and monitor their progress with this element. The scale has five levels, from Not Using (0) to Innovating (4). A teacher at the Not Using (0) level is unaware of the strategies and behaviors associated with the element or is simply not using any of

## Reviewing Content

the strategies. At the Beginning (1) level, a teacher attempts to address the element by trying specific strategies, but does so in an incomplete or incorrect way. When a teacher reaches the Developing (2) level, he or she implements strategies for the element correctly and completely, but does not monitor their effects. At the Applying (3) level, a teacher implements strategies for the element and monitors their effectiveness with his or her students. Finally, a teacher at the Innovating (4) level is fluent with strategies for the element and can adapt them to unique student needs and situations, creating new strategies for the element as necessary.

### Scale for Reviewing Content

4 Innovating	3 Applying	2 Developing	1 Beginning	0 Not Using
I adapt behaviors and create new strategies for unique student needs and situations.	I engage students in a brief review of content that highlights the critical information, and I monitor the extent to which students can recall and describe previous content.	I engage students in a brief review of content that highlights the critical information, but I do not monitor the effect on students.	I use the strategies and behaviors associated with this element incorrectly or with parts missing.	I am unaware of strategies and behaviors associated with this element.

The following examples describe what each level of the scale might look like in the classroom.

**Not Using (0):** A teacher continually presents new content.

**Beginning (1):** A teacher mentions content from previous lessons when it is related to the current lesson, but he doesn't deliberately plan for this or focus on the critical information.

**Developing (2):** A teacher uses quick activities at the beginning of each class to review critical information from the previous day, but she does not know if this is helping students recall more content in the long run.

**Applying (3):** A teacher regularly engages students in a brief review of previously learned content as a way to introduce new content. He monitors students' assessment results, but does not see the gains he expects. He adds cumulative reviews to his routine and is able to see the impact reflected in students' scores.

**Innovating (4):** A teacher uses various strategies to engage students in a brief review of content that highlights critical information. When some students appear to have difficulty solving problems in the current unit, she administers a brief practice test covering prerequisite knowledge from earlier units to identify which skills they need to review and then presents them with problems that help them practice those skills

# STRATEGIES

Each of the following strategies describes specific actions that teachers can take to enact this element in their classrooms. Strategies can be used individually or in combination with each other. Each strategy includes a description, a list of teacher actions, a list of desired student responses, and suggestions for adapting the strategy to provide extra support or extensions. Extra support and extensions relate directly to the Innovating (4) level of the scale. Extra support involves steps teachers can take to ensure they are implementing the strategy effectively for all students, including English learners, special education students, students from low socioeconomic backgrounds, and reluctant learners. Extensions are ways that teachers can adapt the strategy for advanced students. In addition, some strategies include technology tips that detail ways teachers can use classroom technology to implement or enhance the strategy. Finally, each strategy includes further information, practical examples, or a reproducible designed to aid teachers' implementation of the strategy.

## **Cumulative Review**

The most powerful form of review is cumulative review. The teacher not only reviews content from the current unit but helps students relate it to learning or content from previous units. For example, the teacher might have students review the process of evaporation from a unit on the water cycle, and then identify how the same process is present in the current lesson on the regulation of body temperature by warm-blooded animals. Cumulative review also involves students identifying misconceptions they held previously and creating new generalizations.

### **Teacher Actions**

- Identifying content from previous units that relates to the current unit
- Reviewing relevant content from previous units with students
- Making connections between content from previous units and content from the current unit
- Asking students to identify their previous misconceptions
- Asking students to generate new generalizations

### **Desired Student Responses**

- Accurately recalling learning or content from previous units
- Explaining how content from previous units relates to content from the current unit
- Identifying their misconceptions
- Coming up with new generalizations

### **Extra Support**

- Providing handouts or summaries of content from previous units to help students recall content

### **Extension**

- Asking students to compare and contrast the ways previously learned content contradicts or reinforces conclusions about content from the current unit

### **Process for Cumulative Review**

1. After each unit or set of lessons on the same topic, have students record the key content regarding that topic.
2. After the next unit or set of lessons, students again record the key content. In addition, have students identify misconceptions they are now aware of based on the new content and have students create generalizations based on the new and old content.
3. Repeat step 2 with each new unit or set of lessons.
4. Periodically have students list their generalizations from previous units or sets of lessons and create one or more overarching generalizations.



## Cloze Activities

The teacher presents previously learned information to students with pieces missing and asks them to fill in the missing pieces. For example, the teacher might give a partial description of the process of long division and then ask students to identify and describe the missing steps.

### Teacher Actions

- Deleting specific pieces of information from previously learned content
- Presenting the previously learned content (with pieces missing) to students and asking them to fill in the missing pieces

### Desired Student Responses

- Accurately filling in pieces of missing information in previously learned content
- Explaining why the information they filled in makes sense

### Extra Support

- Using pictures, film clips, and audio clips in addition to text to present previously learned information with missing pieces

### Extension

- Asking students to create cloze activities for their peers using previously learned information

### Technology Tips

- Create interactive cloze activities that incorporate images and sentence stems using interactive whiteboard software or online presentation software (such as Prezi), and have students submit responses using clickers with text input or mobile devices with polling software.

### Sample Cloze Activities

- Ancient Egyptian civilization is perhaps most famous for building \_\_\_\_\_, which were used as tombs for their \_\_\_\_\_.
- The three \_\_\_\_\_ that our bodies need for energy are carbohydrates, fats, and \_\_\_\_\_.
- The bald \_\_\_\_\_ is the national animal of the United States. It has a \_\_\_\_\_ of over six feet and white \_\_\_\_\_ on its head.
- South America is one of the seven \_\_\_\_\_. The northern part has the \_\_\_\_\_ rainforest, which is the largest in the world. South America also contains the Andes \_\_\_\_\_ as well as \_\_\_\_\_ countries.
- Fill in the mathematical operator:  $4 \_ 6 = 24$
- Our strategy for taking a test has three steps: (1) Read all the questions. (2) Fill in your answers. (3) \_\_\_\_\_.
- Chantelle is baking a cake. She has preheated the oven and mixed the dry ingredients. Next she should \_\_\_\_\_.

## **Summaries**

To review previously learned content, students briefly discuss what information they remember or found important using short summaries. Teachers can either create summaries for students to review or ask students to prepare their own summaries. The latter option requires teaching students how to create succinct, personalized records of the information they have learned from a new lesson.

### **Teacher Actions**

- Creating a summary of previously learned information
- Asking students to create summaries of previously learned information
- Discussing teacher and student summaries of previously learned information

### **Desired Student Responses**

- Creating accurate, concise summaries of previously learned information
- Explaining why they included or excluded information in their summaries

### **Extra Support**

- Creating video or pictograph summaries in addition to written and oral summaries

### **Extension**

- Asking students to create video, pictograph, or oral summaries about previously learned information

### **Technology Tips**

- Give students multiple options for capturing summaries, including audio recording software like Audacity or speech-to-text apps such as Dragon Dictation.
- Use a timeline tool in interactive whiteboard software or create a timeline template using online word processing software (such as Google Drive) to display the learning goals from previous and upcoming units.



## **Presented Problems**

The teacher presents students with a problem that requires them to use previously learned information in order to solve it. For example, the teacher might ask students to solve a math problem involving exponents that requires them to review previously learned multiplication and division skills.

### **Teacher Actions**

- Creating problems that require students to use previously learned information to solve them
- Prompting students to think about previously learned information while working on presented problems

### **Desired Student Responses**

- Correctly solving presented problems
- Explaining what previously learned information they used while solving presented problems

### **Extra Support**

- Posting previously learned information about how to solve specific types of problems (expressed using words, pictures, diagrams, and charts) in the room where students can refer to it

### **Extension**

- Asking students to create posters that express previously learned information about how to solve specific types of problems using words, pictures, diagrams, and charts

### **Technology Tips**

- Post key slides from presentations about how to solve a specific type of problem on a class website or display them in class to guide students' review.

## Presented Problem Worksheet

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Problem: \_\_\_\_\_

*Describe the problem:*

*What do you already know that will help you solve this problem:*

*Answer:*

*What are some new ideas you have about what you learned previously:*

## **Demonstrations**

The teacher asks students to demonstrate a skill or process that requires them to use previously learned information or a previously learned procedure. For example, a teacher might have students demonstrate how to find the distance between two points on a graph in order to review the distance formula.

### **Teacher Actions**

- Identifying skills or procedures whose performance requires students to use previously learned information
- Prompting students to think about previously learned information while demonstrating skills or procedures

### **Desired Student Responses**

- Correctly performing skills or procedures that require the use of previously learned information
- Explaining what previously learned information they used to perform a skill or procedure

### **Extra Support**

- Posting storyboards or pictorial representations of previously learned skills and procedures in the room where students can refer to them

### **Extension**

- Asking students to create storyboards or pictorial representations of previously learned skills and procedures

### **Technology Tips**

- Have students use digital video recording software on tablets or smartphones to demonstrate their understanding of previously taught content, such as collaborating to script a content review in the form of an evening newscast.
- Have students use screen capture software (such as Jing, ScreenChomp, Educreations, or TouchCast) to create narrated tutorials of previously taught content which can be posted on a class website.

## Planning Guide for Student Demonstrations

Class: \_\_\_\_\_

Unit Topic: \_\_\_\_\_

Skills and processes in this unit:

I plan to ask my students to:

This will require the following procedures and information from previous units:

Common mistakes students might make:

When we are done, I will emphasize:

## **Brief Practice Test or Exercise**

The teacher asks students to complete an exercise that prompts them to remember and apply previously learned information. For example, a teacher might ask students to draw a diagram of a cell or take a short math quiz that incorporates content from previous units. After the test or exercise, students should review any information they remembered or applied incorrectly.

### **Teacher Actions**

- Creating a test or exercise that requires students to remember and apply previously learned information
- Prompting students to think about previously learned information while working on the test or exercise

### **Desired Student Responses**

- Correctly completing tasks that require recall and application of previously learned information
- Explaining what previously learned information they used to complete a task

### **Extra Support**

- Posting a list of correct answers to previous practice tests or exercises (expressed using words, pictures, diagrams, and charts) in the room where students can refer to it

### **Extension**

- Asking students to create lists of previously learned information from practice tests or exercises using words, pictures, diagrams, and charts



## Planning Guide for Practice Tests or Exercises

Class: \_\_\_\_\_

Unit Topic: \_\_\_\_\_

Key content (including vocabulary and processes) that students need to remember or understand:

I will use the following types of problems or exercises to target this content:

I will use the following activity to have students discuss the reviewed content after the test:

## **Questioning**

The teacher asks questions that require students to recall, recognize, or apply previously learned information. These questions might also ask students to make inferences or decisions based on the previously learned information.

### **Teacher Actions**

- Asking students questions that require them to recall, recognize, and apply previously learned information
- Asking students questions that require them to make inferences or decisions based on previously learned information

### **Desired Student Responses**

- Correctly answering questions requiring recall or recognition and application of previously learned information
- Making inferences or decisions based on previously learned information

### **Extra Support**

- Accompanying teacher questions about previously learned information with visuals that clarify important ideas or concepts in the question

### **Extension**

- Asking students to categorize their peers' responses to questions about previously learned information and make generalizations about the content based on their categories

### **Technology Tips**

- Use a student response system that enables students to answer content review questions anonymously and at their own pace, then analyze student response times in order to determine the types of questions students struggle with the most.
- Use online flashcard websites like Quizlet to allow students to work in groups to consider important content and generate review questions for the benefit of the class.
- While reviewing new content, have students rate their understanding of content on a four-point scale using clickers with text input or mobile devices with polling software.

## Review Question Planning Guide

Class: \_\_\_\_\_

Unit Topic: \_\_\_\_\_

Questions that require students to recall or recognize basic details or execute simple procedures:

Questions that require students to explain or exemplify generalizations and principles:

Questions that require students to apply content in new ways:

## **Give One, Get One**

After locating information on a specific topic in their academic notebooks, students stand up and move to find a partner, carrying their notebooks with them. The pair compares what each student has recorded in his or her academic notebook. Students each share at least one piece of information they recorded that the other student did not. Based on this information, students add to or revise the entries in their notebooks. As time allows, students can find a different partner and repeat the process. The teacher leads a discussion afterward in which students share new information they collected or how they revised their notebooks to make them more accurate or complete. In addition to providing a review of the content, this strategy can also be used as a form of physical movement.

### **Teacher Actions**

- Asking students to locate specific information in their academic notebooks
- Asking students to stand up and share the information with a partner
- Asking students to record one piece of information from their partner's notebook in their own notebook

### **Desired Student Responses**

- Finding specific information in their academic notebooks
- Sharing information from their notebooks with peers
- Recording new information that they learned from a peer in their academic notebooks

### **Extra Support**

- Encouraging students to look in other students' notebooks for pictures or diagrams that they want to add to their notebooks

### **Extension**

- Asking students to identify and correct errors in their own or other students' notebooks

### **Discussion Questions**

- Did you learn any new information from your partner that you added to your notebook?
- What new information did you add to your notebook?
- Did you correct any information in your notebook based on your partner's suggestions?
- What misconceptions did you correct?
- Did you and your partner have any disagreements or differing opinions?
- How did you resolve your disagreements?
- How did talking to your partner change how you think about the content?
- How will you use the new or corrected information going forward?

## **REPRODUCIBLES**

Teachers can use the following reproducibles to monitor their implementation of this element. The reproducible titled Tracking Progress Over Time helps teachers set goals related to their proficiency with this element and track their progress toward these goals over the course of a unit, semester, or year. Tracking Teacher Actions and Tracking Student Responses allow observers in classrooms to monitor specific teacher and student behavior related to this element. Teachers themselves can also use the Tracking Student Responses reproducible to document instances of student behaviors during class. The Strategy Reflection Log provides teachers a space to write down their thoughts and reflect on the implementation process for specific strategies related to this element. Finally, this section provides both a student survey and a teacher survey, the results of which provide feedback about teachers' proficiency with this element.

# Tracking Progress Over Time

Use this worksheet to set a goal for your use of this element, make a plan for increasing your mastery, and chart your progress toward your goal.

Element: \_\_\_\_\_

Initial Score: \_\_\_\_\_

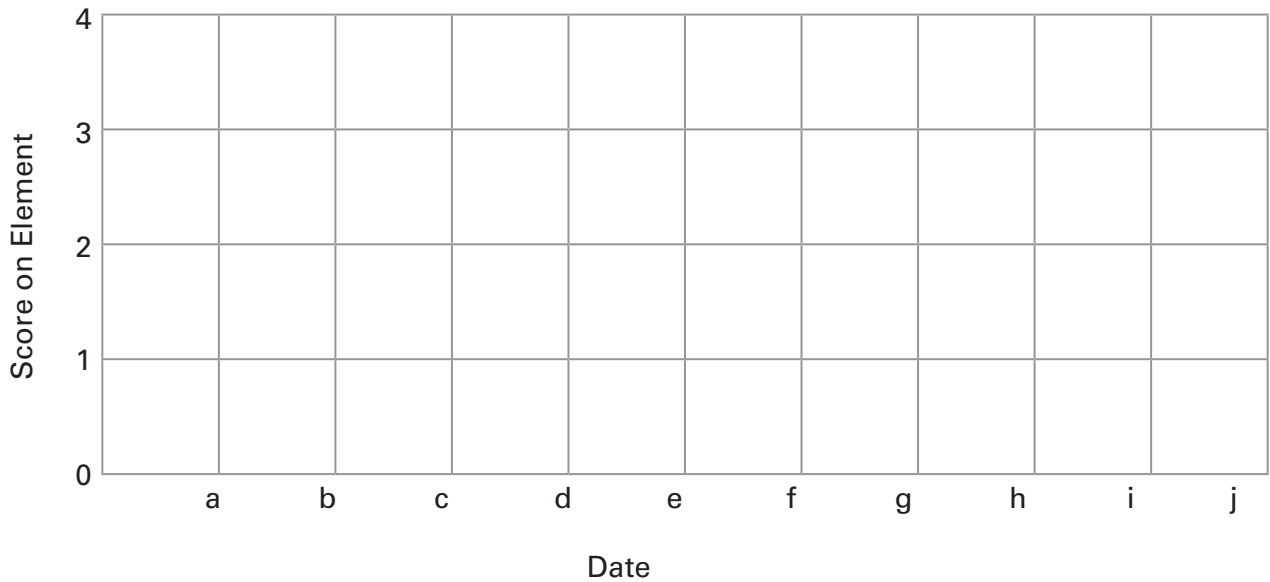
Goal Score: \_\_\_\_\_ by \_\_\_\_\_ (date)

Specific things I am going to do to improve: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



a. \_\_\_\_\_

f. \_\_\_\_\_

b. \_\_\_\_\_

g. \_\_\_\_\_

c. \_\_\_\_\_

h. \_\_\_\_\_

d. \_\_\_\_\_

i. \_\_\_\_\_

e. \_\_\_\_\_

j. \_\_\_\_\_

## Tracking Teacher Actions

During an observation, the observer can use this form to record the teacher's usage of strategies related to the element of reviewing content.

Observation Date and Time: \_\_\_\_\_ Length of Observation: \_\_\_\_\_

Check Strategies You Intend to Use	Strategies	Description of What Was Observed
	Cumulative Review	
	Cloze Activities	
	Summaries	
	Presented Problems	
	Demonstrations	
	Brief Practice Test or Exercise	
	Questioning	
	Give One, Get One	
	Other:	
	Other:	

## Tracking Student Responses

A teacher or observer can use this worksheet to record instances of student behavior to inform planning and implementation of strategies associated with reviewing content. Any item followed by an asterisk is an example of undesirable behavior related to the element; the teacher should look for a decrease in the number of instances of these items.

Observation Date and Time: \_\_\_\_\_ Length of Observation: \_\_\_\_\_

Behavior	Number of Instances
Accurately recalling learning from previous units	
Forgetting information once a lesson or unit is over*	
Correctly answering questions requiring recall or recognition and application of previously learned information	
Explaining what previously learned information they used to answer a question	
Correctly completing a task requiring the use of previously learned information	
Explaining what previously learned information they used to complete a task	
Failing to use previously learned information to answer questions or complete tasks*	
Explaining how content from previous units relates to the current unit	
Other:	
Other:	



## Strategy Reflection Log

Use this worksheet to select a strategy, set a goal, and reflect on your use of that strategy.

Element: \_\_\_\_\_

Strategy: \_\_\_\_\_

Goal: \_\_\_\_\_

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Date	How did it go?

## Student Survey for Reviewing Content

### 1. My teacher reminds me of what I already know.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
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### 2. My teacher usually starts class by talking about what we already know.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
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### 3. My teacher summarizes what we have previously learned.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
-------------------	----------	-------------------------------	-------	----------------

### 4. My teacher asks me to solve problems using information I have already learned.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
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### 5. My teacher asks questions that help me remember what I have already learned.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
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### 6. If I do not understand something that the teacher has already taught, the teacher explains it to me again.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
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## Teacher Survey for Reviewing Content

**1. I begin the lesson with a brief review of the content.**

Often                      Sometimes                      Rarely                      Never                      I don't know

**2. I summarize what students already know.**

Often                      Sometimes                      Rarely                      Never                      I don't know

**3. I ask students to describe the previous content on which a lesson is based.**

Often                      Sometimes                      Rarely                      Never                      I don't know

**4. I ask students to solve problems that require the use of previously learned information.**

Often                      Sometimes                      Rarely                      Never                      I don't know

**5. I ask students questions that require them to use previously learned information.**

Often                      Sometimes                      Rarely                      Never                      I don't know

**6. When necessary, I reteach basic information or skills.**

Often                      Sometimes                      Rarely                      Never                      I don't know