

**KNOWLEDGE APPLICATION
LESSONS**

Generating and Defending Claims

THE **MARZANO COMPENDIUM** OF
INSTRUCTIONAL STRATEGIES



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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.

GENERATING AND DEFENDING CLAIMS

To enact this element, the teacher helps students create claims and defend them logically. Given the growing emphasis on fostering rigor in K–12 education, learning and practicing argumentation can lead to improved academic achievement, especially when defined in terms of college and career readiness among students. Argumentation, or the defense of claims, requires that students generate claims and defend them with grounds, backing, and qualifiers in a logical manner.

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.

- Students can use a wide range of evidence to identify grounds, backing, and qualifiers that support a claim.
- When asked, students can explain how grounds, backing, and qualifiers work together to defend a claim.

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

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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 Generating and Defending Claims

4	3	2	1	0
Innovating	Applying	Developing	Beginning	Not Using
I adapt behaviors and create new strategies for unique student needs and situations.	I engage students in activities that require them to generate and defend their own claims, and I monitor the extent to which students are applying their knowledge.	I engage students in activities that require them to generate and defend their own claims, 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 presents information to students through direct instruction. She explains the supporting evidence for various ideas, but she does not give students the chance to engage in this process themselves.

Beginning (1): A teacher asks students to generate and defend claims but neglects to teach them how to identify sound claims and good support, so the process is not very productive.

Developing (2): A teacher instructs her students in how to generate and defend claims and often incorporates the process into her lessons. She does not, however, monitor whether or not this has caused students to demonstrate increased understanding of the content.

Applying (3): A teacher has implemented this element into his social studies class by having students generate and defend claims about current events. By looking at student scores on various measurement topics over time, he is able to see that since he started including this activity, more students have developed the skills to apply their knowledge and are therefore reaching the 4.0 level of the proficiency scale more often.

Innovating (4): A teacher regularly uses generating and defending claims to help students apply new knowledge, and she monitors students' success with the process. She notices that some students are having difficulty nuancing their arguments or acknowledging exceptions to their claims. To remedy this, she modifies the process so that students start by collecting all the information they can find related to their claim and then sort it into supporting evidence and qualifiers.

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.

Introducing the Concept of Claims and Support

Even though people make claims and provide support quite naturally, it is important to introduce the concept of claims and support to students so that they might engage in this actively more consciously and rigorously. At first, it is enough to introduce the idea that a claim is simply something one believes to be true. Students should be able to provide reasons for their beliefs and be able to provide evidence for those reasons. Reasons and evidence for claims are referred to as support.

Teacher Actions

- Explaining and exemplifying claims or beliefs
- Explaining the relationship between claims, reasons, and evidence
- Exemplifying reasons and evidence

Desired Student Responses

- Being able to explain and exemplify claims
- Being able to explain and exemplify reasons and evidence
- Generating claims with accompanying reasons and evidence

Extra Support

- Providing students with practice exercises in which they identify claims, reasons, and evidence

Extension

- Asking students to find examples of claims with reasons and evidence in the media

Frames for Claims and Support

One of the easiest ways to help students generate claims and support is to provide them with sentence prompts like the following.

Claim: I believe that _____.

Reasons: I believe this because _____.

Evidence: My evidence for this is _____.

Students can complete these sentence stems and share them with the whole class or in small groups.

At the primary level, students might use versions of the prompts such as the following.

Claim: My new idea is _____.

Reasons: I think this because _____.

Evidence: What I actually saw was _____.

These stems are designed to be used with things students can actually observe, such as what happens to a plant growing in the classroom, the behavior of ants in an ant colony, or the habits of birds nesting in a tree outside the classroom.

Presenting the Formal Structure of Claims and Support

When students are familiar with the general concept of claims and support, the teacher can provide them with the more formal distinctions. Specifically, at a formal level, support for a claim should include grounds, backing, and qualifiers.

- **Grounds**—initial reasons for a claim. Students should provide grounds that answer the question, Why do you think your claim is true?
- **Backing**—additional information about grounds that helps establish their validity. Backing is more specific, in-depth evidence, such as research-based data, expert opinions, and facts.
- **Qualifiers**—exceptions to claims. The number of qualifiers needed for a claim can help determine the certainty of a claim.

Teacher Actions

- Explaining grounds, backing, and qualifiers to students
- Asking students to provide grounds, backing, and qualifiers for their claims
- Asking students to explain why their claims are valid

Desired Student Responses

- Providing grounds, backing, and qualifiers for their claims
- Explaining why their claims are valid

Extra Support

- Telling stories about famous claims and labeling the different kinds of support presented for them as grounds, backing, or qualifiers

Extension

- Asking students to find other people who have made claims similar to their own and having them compare their support with other support given for that claim

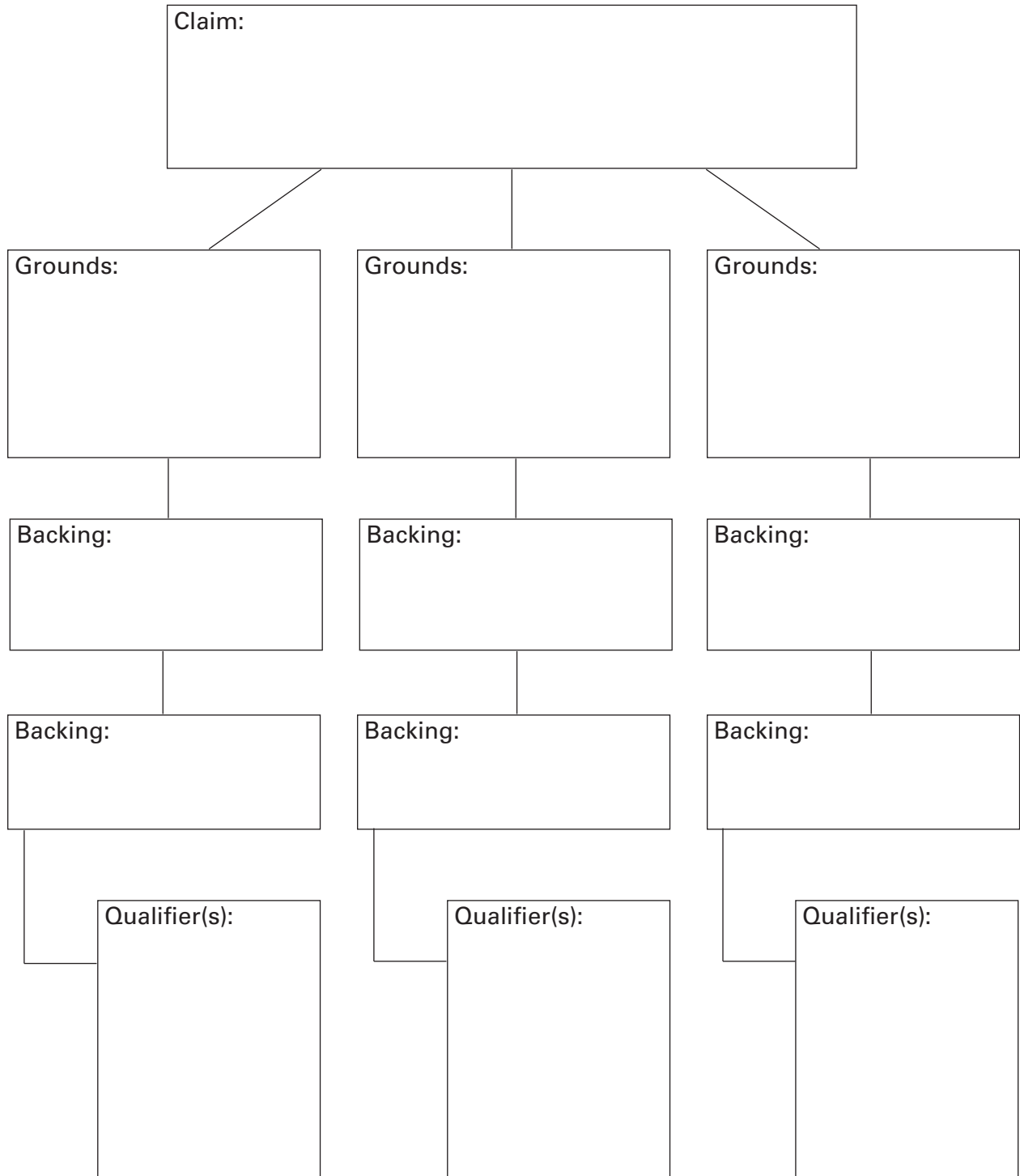
Technology Tips

- Have students use Internet search tools to locate reputable online resources to back their claims.

Diagramming an Argument

Name: _____ Date: _____

Class: _____



Generating Claims

A claim is a new idea or opinion. Claims can take many forms. They can express an opinion that a certain action is necessary. They can express an opinion that something is good or bad, important or unimportant. They can express an opinion that something is better or worse than something else. It is useful to present students with claims like the following and have them identify the underlying message in each claim.

- Students should attend school year-round.
- Football is an unhealthy sport.
- Colorado is the best place to live in the United States.

It is also important to help students differentiate claims and facts. Claims are usually statements with which others may agree or disagree; facts are statements that can be verified.

Teacher Actions

- Presenting example claims to students
- Identifying the underlying message of claims
- Explaining the difference between claims and facts
- Asking students to generate their own claims and identify the underlying message of claims

Desired Student Responses

- Differentiating between claims and facts
- Creating their own claims and being able to describe their underlying message

Extra Support

- Using multimedia or visual elements, such as PowerPoints, videos, pictures, or diagrams, to help students differentiate between claims and facts

Extension

- Asking students to generate lists of claims and facts and exchange them with other students, then discuss and label each item on the list to identify it as either a claim or a fact

Claims Versus Facts

At their core, claims are opinions whereas facts are statements that can be confirmed or verified. For example, the following statements are facts.

- Colorado became the thirty-eighth state in the United States on August 1, 1876.
- At sea level on Earth, water boils at 212 degrees Fahrenheit.
- Abraham Lincoln delivered the Gettysburg Address on Thursday, November 19, 1863.

In contrast, these statements are opinions:

- Colorado is the best place to live in the United States.

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- Hot water is never pleasant to drink.
- Abraham Lincoln was the most eloquent of all the U.S. presidents.

Facts and opinions fall along a continuum, with pure facts on one end and pure opinions on the other end. Many statements fall somewhere in the middle, such as the following:

- There is intelligent life elsewhere in the universe.
- Increased taxation stifles economic growth.

Although opinions cannot be definitively proven or disproven, they can be supported with evidence—grounds, backing, and qualifiers. Students can identify claims by looking for certain types of words that signal an opinion.

- Subjective descriptions—for example, *awful, amazing, beautiful, useful, disgusting, ineffective, miserable, favorite*
- Superlatives—for example, *best, worst, most, smartest*
- Modal verbs—for example, *should, must, ought*

Additionally, there are some statements that do not fall anywhere on the continuum of fact and opinion—false or incorrect statements. If a sentence is objectively untrue, it is neither fact nor opinion. For example, “Earth is the sixth planet from the sun” is an incorrect statement.

Providing Grounds

Grounds are the initial reasons for a claim. Grounds answer the question, “Why do you think your claim is true?” To help students provide grounds for their claims, have them add the word *because* to the end of their claims and then ask them to finish their sentences. The portion of the sentence following *because* is grounds for the claim. For example:

- Students should attend school year-round because they often forget what they learned in school over the summer.
- Football is an unhealthy sport because players often suffer serious injuries.
- Colorado is the best place to live in the United States because it has so many ski resorts in a relatively small area.

Teacher Actions

- Explaining how grounds serve as evidence or reasoning for a claim
- Providing examples of a finished sentence that includes a claim, the word *because*, and grounds
- Asking students to provide grounds for their own claims in a finished sentence

Desired Student Responses

- Explaining the relationship between grounds and claims
- Generating finished sentences with a claim, the word *because*, and grounds that serve as evidence or reasoning for the claim

Extra Support

- Providing visuals (posters, flowcharts, diagrams, models) that students can use to create grounds supporting a given claim

Extension

- Asking students to create their own visuals (posters, flowcharts, diagrams, models) that illustrate the grounds supporting their own claim

Example Claims With Grounds

- iPads are better than books because you can fit lots of ebooks on your iPad.
- Students should be allowed to eat during class because if they get hungry it’s harder for them to learn.
- The United States should get rid of the penny because it costs more to make than it is worth.
- We should tax unhealthy food because it will help more people live healthy lives.
- Print newspapers are obsolete because we can get information faster on the Internet.

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- *Mulan* is the best Disney movie because it has exciting songs.
- Superhero movies are awful because they are unrealistic.
- Owls are the most interesting animals because they can turn their heads so far around.
- Classical music is boring because it doesn't have words.
- We should not be required by law to wear seatbelts because it is a personal choice about our own safety.
- Kids should not play video games because playing outside is better for your health.

Providing Backing

Backing provides specific information about grounds that help establish their validity. In some cases, backing is simply a more in-depth discussion of the grounds. There are three types of information that generally make good backing: expert opinion, research results, and factual information.

Teacher Actions

- Defining and providing examples of the three types of backing
- Asking students to find backing for their claims

Desired Student Responses

- Differentiating between the three types of backing
- Providing examples of each of the three types of backing
- Using one or more of the three types of backing for their own claims

Extra Support

- Providing examples of backing for students to choose from when asking them to support claims

Extension

- Asking students to judge when each of the three types of backing is most appropriate or least appropriate

Three Types of Backing

Type of Backing	Definition	Examples
<i>Expert Opinion</i>	A statement made by an individual who is recognized as an expert in his or her field.	<p>Someone with a doctorate in climatology and years of field-research experience offers an opinion on the severity of global warming.</p> <p>An experienced and successful director of Broadway plays offers an opinion on the quality of an acting performance.</p> <p>An official at the U.S. Federal Reserve offers an opinion on the state of the economy.</p>
<i>Research Results</i>	Data collected through methodical investigation or through scientific experiments that are designed to test a hypothesis. Conclusions based on research results are not as unanimous and definitive as facts, but they come closer as more studies yield the same findings.	<p>A U.S. Census Bureau report on wage equality found that working women's full-time earnings are approximately 75 percent of working men's earnings.</p> <p>The results of a meta-analysis show that use of academic games in the classroom is associated with a gain of 20 percentile points in student achievement.</p> <p>The National Center for Injury Prevention and Control conducted a study and found that one out of five high school students are bullied at school.</p>
<i>Factual Information</i>	Information that has evidential support and is generally acknowledged to be proven or true.	<p>The state flower of Montana is the bitterroot.</p> <p>The American Civil War began in 1861 and ended in 1865.</p> <p>Ladybugs help plants by eating pests such as aphids.</p>

Generating Qualifiers

Qualifiers are exceptions to claims that indicate the degree of certainty for the claim. Often, as students research a topic, they will find information that supports a particular claim and other information that does not. Rather than ignoring information that does not support a particular claim, students can use nonsupporting information to specify situations in which their claim might not apply or address potential objections to their claim as part of their argument. To help students generate qualifiers, teachers can ask them to collect a wide range of evidence for a claim. Then, students can sort that evidence into two categories: evidence that supports the claim and evidence that does not support the claim. Evidence supporting the claim should be sorted into grounds (which are more general) and backing (which is more specific). Evidence that does not support the claim can be used to generate qualifiers.

Teacher Actions

- Defining and providing examples of qualifiers
- Asking students to collect a wide range of evidence for a claim
- Helping students identify the evidence that does not support the claim from the wide range of evidence
- Asking students to use evidence that does not support the claim to create qualifiers to the claim

Desired Student Responses

- Isolating evidence that does not support a claim from a wide range of evidence
- Using evidence that does not support a claim to specify situations in which the claim might not apply or addressing potential objections to the claim as part of their argument

Extra Support

- Providing evidence that does not support a claim for students to articulate into qualifiers

Extension

- Asking students to collect a wide range of evidence for a claim and create grounds, backing, and qualifiers from the wide range of evidence

Classifying Information

Name: _____ Date: _____

Class: _____

As you conduct research about your claim, sort the information into supporting and nonsupporting categories. Then, use the supporting information to write grounds and backing and use the nonsupporting information to write qualifiers.

Supporting Information	Nonsupporting Information
Grounds and Backing	Qualifiers

Formally Presenting Claims

Once students have an understanding of the nature of claims and support (that is, grounds, backing, and qualifiers) they should be provided with opportunities to generate claims and present their support. Of course, this can and should be done in an ad hoc manner during class discussion (see the folio entitled “Elaborating on Information”), but there should also be times when students are provided with opportunities to more formally generate and defend claims. These claims can come from their work on cognitively complex tasks: experimental inquiry, problem solving, decision making, investigation, and invention (see the folio entitled “Engaging Students in Cognitively Complex Tasks”).

Teacher Actions

- Providing time for students to generate claims and their accompanying support
- Engaging students in discussions after claims have been presented and supported

Desired Student Responses

- Making formal presentations about their claims and support
- Engaging in discussion and answering questions about their claims and support

Extra Support

- Recording video examples of effective formal presentations of claims and support

Extension

- Having students who are good at making formal presentations of claims and support mentor those who are not

Student Self-Assessment for Formally Presenting Claims

Name: _____ Date: _____

Class: _____

After a formal presentation of a claim and support, use this form to self-assess your efforts.

	What I Did Well	What I Can Improve On
<i>My claim</i>		
<i>My grounds</i>		
<i>My backing</i>		
<i>My qualifiers</i>		

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

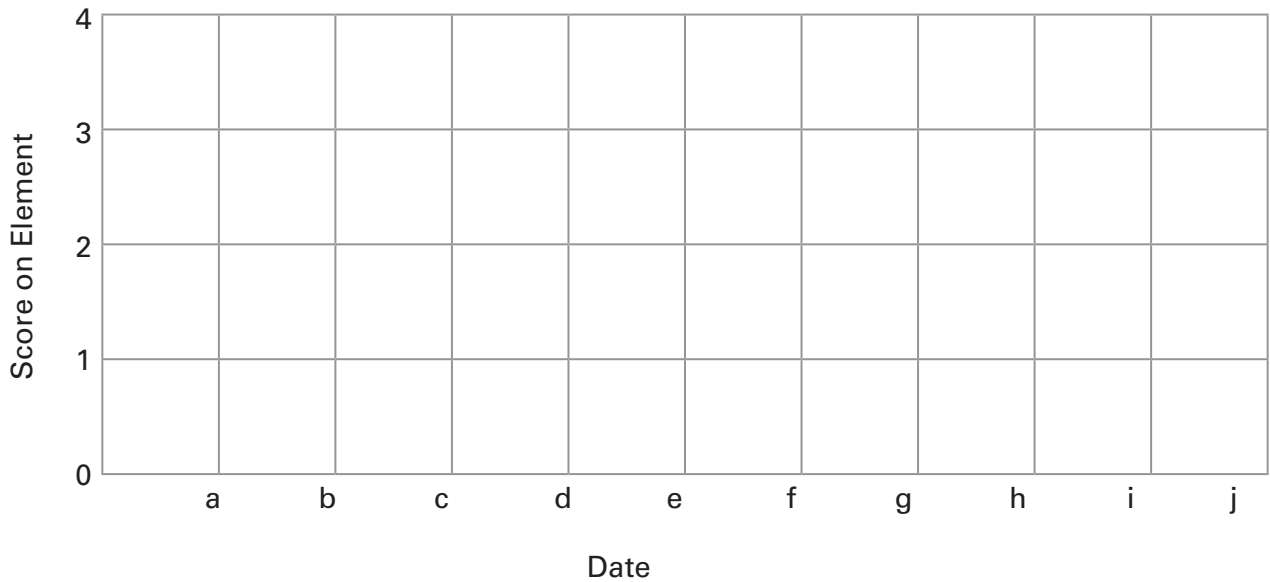
Use this worksheet to set a goal for your use of this element, make a plan for increasing your mastery, and chart your progress toward your goal.

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 generating and defending claims.

Observation Date and Time: _____ Length of Observation: _____

Check Strategies You Intend to Use	Strategies	Description of What Was Observed
	Introducing the Concept of Claims and Support	
	Presenting the Formal Structure of Claims and Support	
	Generating Claims	
	Providing Grounds	
	Providing Backing	
	Generating Qualifiers	
	Formally Presenting Claims	
	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 generating and defending claims. 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
Generating claims	
Providing grounds and backing for claims	
Providing qualifiers to claims	
Explaining how evidence supports a claim	
Collecting a range of information about a claim	
Assessing the quality of claims and evidence	
Formally presenting claims	
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: _____

Date	How did it go?

Student Survey for Generating and Defending Claims

1. My teacher asks me to make claims and defend them.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
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2. I understand grounds and give reasons for my claims.

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

3. I understand backing and use the three types to give evidence for claims and grounds.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
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4. I understand and generate qualifiers.

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

5. When I am researching information about a claim, I sort what I find into supporting and nonsupporting information.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
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6. When I make a claim about something in this class, my teacher expects me to defend it with evidence.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
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Teacher Survey for Generating and Defending Claims

1. I define and give examples of the parts of an argument.

Often Sometimes Rarely Never I don't know

2. I explain how the parts of an argument logically support the claim.

Often Sometimes Rarely Never I don't know

3. I ask my students to make and defend claims.

Often Sometimes Rarely Never I don't know

4. I use generating and defending claims to help students apply content knowledge.

Often Sometimes Rarely Never I don't know

5. My students support claims with a range of grounds, backing, and qualifiers.

Often Sometimes Rarely Never I don't know

6. My students can explain how their evidence supports their claims.

Often Sometimes Rarely Never I don't know