

# Showing Evidence Tips

## Introduction

The ability to evaluate and construct arguments is particularly important in today's society where individuals are constantly confronted with new information.

*Argumentation* is about making claims and providing justification for those claims.

*Justification* means that people can question why they should believe an assertion or claim. A claim should not just be an individual's opinion, but should be justifiable if another individual challenges it. *Showing Evidence* helps students build cases for their arguments as well as consider evidence against their claims. Access the following sections of this document to learn about best practices for using the *Showing Evidence Tool*:

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## Understanding the Parts of an Argument

Discussing the components of an argument at its most basic levels is critical before using the *Showing Evidence Tool*, particularly with younger students. The simplest argument consists of only a claim and evidence.

- **Claim**—The conclusion or assertion that a person is attempting to prove.
- **Evidence**—The facts or data used to either support or oppose the claim. This is also known as proof, data, arguments, observations, or grounds. The support of a claim can come in the form of facts and statistics, expert opinions, examples, explanations, logical reasoning, witness testimony, documentation, and so forth.

**Claim—What you are trying to prove or persuade**

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**Supporting Evidence**

**Counterevidence**

## Elements of an Argument and the Showing Evidence Tool

In the following table, the elements of an argument are defined, along with examples from an argument about whether genetically engineered food should be banned in the United States.

**Note:** Because this table is provided to give examples of the components of an argument, only one piece each of supporting and opposing evidence is listed. However, an argument would normally include multiple pieces of evidence.

| Component                                           | Definition                                                                                               | Example                                                                                                                                                                                            |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Claim</b>                                        | The conclusion or assertion that a student is attempting to prove.                                       | Genetically modified foods should not be banned.                                                                                                                                                   |
| <b>Evidence</b>                                     | Facts or data that are used to support the claim.                                                        | Crops can be genetically engineered to produce a pesticide.                                                                                                                                        |
| <b>Quality of Evidence</b>                          | Confidence in the evidence: Do you trust the source? Do multiple sources agree?                          | <i>High quality</i> —Many sources discuss this. Numerous crops, such as potatoes, cotton, and corn, have been modified with a Bt gene that controls production of a toxic protein.                 |
| <b>Linking Claim and Evidence</b>                   | A connection between the claim and evidence.                                                             | If a crop produces a pesticide that is harmful only to pests, it is a very strong reason to allow genetically engineered food.                                                                     |
| <b>Reasoning</b>                                    | The general principle or idea that allows you to make the connection between the claim and the evidence. | A pesticide is a chemical substance used to kill pests, like insects. By genetically engineering crops to produce insecticides, fewer crops will be lost to insects, which will produce more food. |
| <b>Counterargument (Evidence against the Claim)</b> | Consideration of evidence and reasoning that goes against the claim.                                     | Genetically engineering crops that include pesticides can kill other "nontarget" insects, such as monarch butterflies.                                                                             |

## Understanding What Makes a Good Showing Evidence Project

The *Showing Evidence Tool* is most beneficial when students need to develop arguments supported by evidence or facts. Developing these arguments often involves analyzing conflicting information, sorting through complex ideas, or evaluating controversial topics. A project that integrates the *Showing Evidence Tool*:

- Contains elements of a controversial issue, debatable topic, moral or ethical dilemma, social issue, or challenge to an existing opinion
- Provides engaging, thought-provoking, and open-ended project questions
- Answers to the project are not readily attainable or evident
- Addresses existing conflicting evidence, with multiple perspectives or methods of evaluation available

### Plan for Opportunities to Reflect and Revise

To maximize learning, good projects have time built-in for student reflection. The *Showing Evidence Tool* supports investigation that occurs in cycles of evidence gathering, using the *Showing Evidence Tool*, and reflecting. After building an initial case, students experiment or research to gather more data and evidence, and then return to revise and adjust their cases, based on research and reflection. Journal reflections and peer review can be used in the tool to help students focus and refine their work. Students also need time away from the computers to plan and carry out the next cycle of data gathering and revision.

### Plan for Student Teams

Although individual students can use the *Showing Evidence Tool*, the tool is more powerful when used by teams. Students are able to share their opinions as they consider the evidence to use and why the evidence is important. Students are more engaged in learning when they share their opinions about particular evidence or try to convince their teammates to change the quality ranking of a piece of evidence. Such discussions help students further clarify their ideas. Working as a team, students make decisions, prioritize, negotiate, and seek consensus.

### Consider Assigning Reviewing Teams

The *Showing Evidence Tool* allows teams to review other teams' work. Including team reviews in a project can help students become more thoughtful and express their ideas more clearly. Providing guidelines on content and structure of feedback helps students develop constructive feedback. Teams can be paired together based on differing opinions or shared views.

## Creating a Showing Evidence Project

The guidelines presented in this section can help you successfully set up effective *Showing Evidence* projects.

### Project Checklist

The following checklist helps you to plan and understand how to use the *Showing Evidence Tool* effectively.

- The project description is focused and clear. The description provides background and/or context for how the use of the *Showing Evidence Tool* fits in the unit or project.
- The project description defines what the students will be trying to solve, produce, respond to, test, recommend, or discover.
- The prompt requires students to analyze a controversial issue, debatable topic, moral or ethical dilemma, social issue, or challenge to an existing opinion.
- The project's questions are engaging, thought-provoking, age-appropriate, and open-ended.
- A rating system has been developed so that evidence is rated consistently with clear explanations and rationale.
- The use of the *Showing Evidence Tool* helps students meet the learning goals of the unit or project.

### Project Setup

Use the following steps and tips to set up a *Showing Evidence* project.

1. Open *Showing Evidence* and log in to your Teacher Workspace:  
[www.intel.com/education/showingevidence](http://www.intel.com/education/showingevidence)
2. When setting up a new *Showing Evidence* project, consider the following:
  - The **Project Name** could specifically reference the purpose or use of the *Showing Evidence Tool* in your overall project. This title will appear in the Student Workspace as well as above your students' *Showing Evidence* cases. You can change the name of the project later if you wish. (You may want to copy and paste the title from your Unit Plan.)

**Note:** When more than one project is assigned to a team, a list of available projects will appear on the Student Workspace page. Students should be able to differentiate the projects by looking at the project names. This is one reason that you should create a project name that specifically identifies the focus or use of the *Showing Evidence Tool*, rather than just the unit name.

- The **Project Description** is a focused, short paragraph that describes the project to your students and explains how they will use the *Showing Evidence Tool* to help them answer the questions of the project. The project description should be able to convey in a few sentences why this is a project or problem that is worthy of study, as well as define what your students will be trying to solve, produce, respond to, test, discover, or recommend. This description will appear in the Student Workspace, so you should use vocabulary that is age-appropriate.
- The **Prompt** (the section showing the question your students will be asked to answer in this project) will also be displayed on the top of the students' *Showing Evidence* case. A *prompt* is the question that students respond to in their case. This question and resulting investigation provide a foundation for students to build understanding around the complexities of the project or problem.
- *Showing Evidence* can be set up with a **Standard** or **Simplified** version of the tool. The simplified version does not require students to rate evidence or support, or explain how the evidence supports or opposes the claim. This version may be helpful with younger students or during practice sessions when you simply want students to get used to the idea of documenting evidence and weighing support for a claim. (See *Help Guide, Teaching Tools, Showing Evidence Tool Skill 3.8.5 and 3.8.6.*)
- You can change the **vocabulary** of the of the *Showing Evidence* labels. The vocabulary used in the *Showing Evidence Tool* can be changed to match the particular project or subject matter that your student teams will be addressing.
- You can **pre-populate** the student teams' cases to include claim(s) and/or unrated evidence. Set up the workspace as you want it to appear when your students begin working on their cases.

**Note:** You will not be able to change, delete, or add to any pre-populated evidence or claims after you have assigned teams unless you unassign them first. If you have doubts about any elements you are considering adding as pre-populated items in a practice case, you may want to simply add them in the Student Workspace, rather than in the Teacher Workspace. Since this is a practice project, it will not impact your practice project in any significant way.

## Creating a Case

A case includes a claim and evidence. The next two sections provide some tips for developing effective claims and evidence.

### Claim

When developing a claim, consider the following:

- Use a short sentence in the *Your Claim* section so that it can be read with minimal scrolling.
- Enter a more detailed explanation of the claim in the *Your Explanation* section, if needed. Expand on the claim summary and elaborate on its meaning.
- The *Your Rating* section is normally completed after all the evidence has been created and evaluated. However, you may want to instruct your students to update this section as they go. It can provide a snapshot as to how they feel the argument is progressing at the moment. Students could then modify it as they gather more evidence.

### Evidence

When creating evidence, consider the following:

- The *Evidence Summary* needs to have a very short title that is as clear as possible. You need to be able to scan and understand the titles when the evidence is attached to the claim.
- The *Explanation* contains the detail of the evidence. You will need to clarify your expectations for this section to your students.
- The *Source* contains information about where evidence came from. Web site addresses pasted in this section are clickable. Clarify for your students your expectations for this section as well, including the acceptable resources.
- If you are using the standard version of the tool, rate the quality of the evidence and provide the rationale. Five check marks mean high quality; one check mark means low quality. This rating should indicate the level of assurance you have for the reliability of the source and quality of the evidence.
- The *Evidence Quality* is rated solely on how much you trust the source and believe the evidence is accurate. The rating is not to be based on whether the evidence supports the claim.

## Evaluating Evidence

When an argument is more complicated, particularly when multiple claims could be supported, the following components become essential to evaluating and justifying the claim.

### Quality of the Evidence

- Is the source reliable and credible?
  - Is the author of the source just someone with a Web site or is the author an expert in the field? Is the associated organization well respected and considered trustworthy?
  - Does the source have a built-in bias? If so, does it compromise the quality of the evidence?
  - Is it a primary or secondary source?
  - What other source quality criteria are you considering?
- How accurate is the evidence?
  - How old is the evidence? Does age of the content matter for this topic?
  - Is the evidence verifiable?
  - Is the data presented appropriate/accurate? Is it misrepresented or taken out of context?
  - Is the data or content provided as evidence of a fact, an interpretation of a fact, or someone's opinion?
  - If the evidence is student-created (experiments, mathematical proofs, their own data gathering, and so forth), what steps were taken to ensure that the evidence is accurate?
  - What other accuracy evaluation criteria are you using?

### Strength of the Evidence to Support or Oppose a Claim

- Were all important counterarguments explored and included?
- Is the evidence central to the argument?
  - Does the evidence go to the heart of the claim?
  - If this piece of evidence were taken away, would your argument fall apart?
  - Does the evidence provide only superficial or minor support?
  - What other strength criteria are you using?

### Reason Why the Evidence Supports or Opposes a Claim

- What general principle or idea allows that connection?
- How does this particular piece of evidence support or oppose the claim?
- What other reasoning criteria are you using?

## Reviewing Student Cases as a Teacher

When students use *Showing Evidence*, time should be spent reflecting on their experiences with the tool.

### Discussion Questions for Use with Showing Evidence

Consider the following questions as you discuss your students' experiences:

- **Making a Claim**
  - If, during your collection of evidence, you found that your claim could not be supported, would you consider changing your claim?
  - Would you make a new one? Or would you stay with the current claim and use the evidence to show the claim cannot be supported?
- **Gathering Evidence**
  - How did you select or find evidence?
  - What were you looking for in your choice of evidence?
- **Evaluating Evidence**
  - Did you have discussions about the validity, reliability, or relevance of the evidence?
  - What kinds of evidence would you consider credible or reliable?
- **Linking Evidence to the Claim**
  - Does all the evidence weigh equally in its support of or opposition to the claim?
  - Are there questions about any of the evidence as to whether it truly supported or opposed the claim?
  - Could any of the evidence be used to both support and oppose the claim, depending on how it is used?
  - Did you have questions about any of the evidence belonging in the argument?
- **Considering Counterarguments**
  - Why is it important to include both supporting and opposing pieces of evidence in an argument?
  - What discussions did you have as you considered opposing evidence?
  - Did the opposing evidence weigh equally with the supporting evidence?
- **Making a Conclusion**
  - What did you consider as you discussed whether the claim could be supported by the available evidence?
  - Did you discuss whether the claim should be rewritten? Would it help clarify the issue if sub-claims could be explored?
  - The claim itself does not answer the question of the case or argument—the conclusion does. What did you conclude about the claim?



- **Overall**
  - What information would you have liked to know prior to starting your work?
  - In what ways did the *Showing Evidence Tool* help you to refine and evaluate your ideas?

## Reviewing Student Work Online

Use the following steps to review students work in *Showing Evidence*:

1. Log in to the Teacher Workspace in *Showing Evidence*, and open your student sample *Showing Evidence* project at [www.intel.com/education/showingevidence](http://www.intel.com/education/showingevidence). (See *Help Guide, Teaching Tools, Showing Evidence Tool Skills 3.5 and 3.36.*)
2. Review the work for your student sample. You cannot make changes to the work, but you can add comments as a reviewer on the evidence, the evidence rating, the support rating, and the claim. (See *Help Guide, Teaching Tools, Showing Evidence Tool Skills 3.36 and 3.31.*)
3. Use the Comments box to leave feedback or ask questions. The Comments box is available at the bottom of the screen to support open-ended communication between a teacher and students in a team, for comments on a project as a whole. The Comments box can only be seen by the teacher and the student team who has created the case. This box is provided for more general comments and concerns that the teacher wants to share with the team, the team members want to share with each other when not working in the same location, or responses to existing comments. All comments are saved sequentially, with the most recent one at the top. (See *Help Guide, Teaching Tools, Showing Evidence Tool Skills 3.34.*)