

THE INVESTIGATORS

Educator Guide

TABLE of CONTENTS

Menu of Options	**p. 4**
Note on Adapting Materials	**p. 5**
Objectives of Lessons and Assessments	**p. 6**
Pre-Game Lesson Plan	**pp. 7-10**
Pre-Game Guiding Questions	**pp. 11-14**
Lesson Plan #1: Sustainability	**pp. 15-21**
Sustainability Guiding Questions	**pp. 22-24**
Lesson Plan #2: Sport	**pp. 25-30**
Sport Guiding Questions	**pp. 31-33**
Lesson Plan #3: Election	**pp. 34-37**
Election Guiding Questions	**pp. 38-40**

Menu of Options

Integrated into classrooms	• Use the Pre-Game lesson before playing the game to introduce the key themes of *The Investigators.* • Use one of the lesson plans. Each lesson plan will take one or two 1-hour class periods, depending on the age of the students and their familiarity with evaluating online information. • Use all four of the lesson plans. We'd suggest the following sequence: Pre-Game, Sustainability, Sports, and Election. • After teaching the lessons, use the formative assessments to check student understanding. • Use the formative assessments as brief do-now activities at the start of class or as exit tickets at the end.
Media centers	• Use the Pre-Game lesson to introduce key aspects of information literacy. • Use one (or all) of the lessons as part of a unit focused on teaching students how to do online research. • Use the sequence of lessons as an introduction to digital literacy. • Briefly introduce key aspects of digital literacy using the formative assessments as do-now activities at the start of sessions.
Out-of-school venues	• After-school programs: Use the Pre-Game lesson before playing the game to introduce the main themes of *The Investigators.* • After-school programs: Students can play the game and then spend 5 to 10 minutes answering one of the formative assessments. • After-school programs could modify the lesson plans if they have less time with students. For example, in the election lesson, a teacher could just show students how a video had been selectively edited rather than have students go through all the guiding questions. • Homeschool groups: The lesson plans can be readily used as a part of a homeschool curriculum, either with an individual student or with groups of students.

Note on Adapting Materials

Educators will note that the lesson plans and formative assessments for *The Investigators* feature examples drawn primarily from the United States. Although in many cases these examples can work across national contexts, educators may want to adapt the materials to incorporate examples drawn from their own contexts. For example, the Sustainability lesson features a website created by a public relations firm working on the behalf of corporate interests in the United States. The lesson could be adapted for another context by using a different website that similarly obscures its backers.

Objectives of Lessons and Assessments

Lesson/Assessment	Objectives
Pre-Game Lesson	Introduction to information sources that vary in their trustworthiness and how to identify problematic aspects
Sustainability Lesson	Learn how to read laterally; contrast what is learned by reading laterally to what is learned by dwelling on the same website
Sport Lesson	Verify a claim; choose effective search terms; and explore the issue of authority
Election Lesson	Analyze video evidence, specifically deceptively edited video
Pre-Game Task #1	Identify lack of evidence in a social media post
Pre-Game Task #2	Understand false cause
Pre-Game Task #3	Learn about sponsored content
Pre-Game Task #4	Verify claims online
Pre-Game Task #5	Identify manipulated video
Pre-Game Task #6	Evaluate an online video
Pre-Game Task #7	Identify a manipulated photo
Pre-Game Task #8	Consider cherry-picked information
Sustainability Task #1	Verify claims online
Sustainability Task #2	Learn about types of website domains
Sustainability Task #3	Identify limitations in data
Sustainability Task #4	Consider conflicts of interest and learn about types of website URLs
Sports Task #1	Use search terms effectively
Sports Task #2	Consider limitations of sources and understand false cause
Sports Task #3	Use search terms effectively
Election Task #1	Consider limitations of different types of sources
Election Task #2	Consider limitations of different types of sources
Election Task #3	Evaluate strategies for verifying online information

THE INVESTIGATORS
PRE-GAME LESSON

Pregame Lesson: The Broken Trophy Case

Strategy Focus: Evaluating Sources

The Problem: Students often unquestioningly accept information at face value. They do not consider the limitations of different types of sources and often do not seek out other perspectives.

This lesson introduces students to the importance of evaluating evidence. Using a hypothetical scenario about a school trophy case that gets damaged, students weigh the strengths and limitations of different types of evidence.

Materials:

- The Broken Trophy Case sources
- The Broken Trophy Case Graphic Organizer

Lesson Summary:

1. Students consider various sources to figure out who broke a school trophy case.
2. Students complete a graphic organizer asking them to analyze the strengths and weaknesses of each source.
3. Students engage in a whole-class discussion about the sources and who broke the case.

Timing:

In-school: This lesson is designed to be completed before students play *The Investigators*. Depending on the students, it will take between 40 and 80 minutes to complete the lesson. If you would like to add a 10-minute do-now activity at the beginning of the lesson, you could have students complete one of the pre-game formative assessment tasks and debrief the answers together as a class.

Out-of-school: This lesson is designed to be completed before students play *The Investigators*. Depending on the students, it will take between 40 and 80 minutes to complete the lesson as a group. If students are completing the lesson independently, it will take 30-60 minutes to complete the lesson (it will not take as along because students will not be discussing the answers with peers).

Connection to *The Investigators* & Lesson Plan

1. Explain to students: *We're going to be playing a new Minecraft map called* The Investigators*. It focuses on understanding why information is created, how to spot untrustworthy information, and what we can do when we locate information we don't trust. Before we play*

The Investigators, *we are going to begin to think about how to evaluate online information by analyzing sources about an incident in a school where a trophy case was broken.*

2. Pass out The Broken Trophy Case sources and graphic organizer.

3. Explain: *Imagine that you are the principal of a school who is investigating what happened to the trophy case. To do so, you have collected a variety of sources about what happened. Now you are going to read through the sources and complete the graphic organizer.*

   Have students read the sources and complete the graphic organizer in small groups.

4. After students have read the sources and completed the graphic organizer, discuss their answers as a whole class. Key points to address about each source include:

Social media video: Students should note that while the video shows Victor breaking the trophy case, it doesn't show what caused him to fall into the trophy case. When we view short video clips like this one, it is crucial to consider what happened *before* and *after* the clip. Videos are often edited to create a false context. It is important to make sure that a clip was not taken out of context.

Victor: Since he was the person who broke the case, his account is useful for understanding what happened. However, he might be worried about getting in trouble for breaking the trophy case, so he might not be telling the truth. He might also not want to get other students in trouble.

Shawn's social media post: This source blames Victor for jumping into the case. However, students should note that we can't trust everything that we read online, nor is the number of likes a post receives an indication of its trustworthiness. It is possible that Shawn is blaming Victor to get attention on social media or to avoid getting in trouble himself.

Victor's father: This source provides evidence that Victor feels bad about what happened, corroborating what Victor said. Victor's father argues that someone must have pushed Victor, but he did not personally witness the event and he provides no evidence to support this claim. Plus, Victor's father is not an objective source. He may be inclined to believe his son is innocent, and he might be trying to keep his son out of trouble.

Angelica's social media comment: Angelica was present when the case was broken, but she admits that she didn't actually see what happened. Instead, she claims that Victor's clumsiness must have been responsible. This is a case of "false cause." Just because Victor is clumsy doesn't mean that's the reason he fell into the case.

School newspaper: The newspaper is presenting information to inform its readers about what happened. The story introduces the possibility that the case was broken after kids were causing

a commotion in the lobby. However, the newspaper relies on an unnamed source, which might make us question the accuracy of this account.

Second social media video: This video shows Victor and Shawn roughhousing, which provides additional context about what happened just before the case was broken. However, the evidence in the video is circumstantial. It introduces the possibility that the roughhousing led to the incident, but it doesn't directly show what caused Victor to fall into the trophy case.

Shawn: He was an eyewitness to the incident. On the other hand, he may not be telling the truth because he's afraid of getting in trouble for what happened.

5. Ask students to share who they believe was responsible for breaking the trophy case and to cite the evidence that they found most convincing.

THE INVESTIGATORS
PRE-GAME LESSON
STUDENT GUIDING QUESTIONS

The Broken Trophy Case

You are the principal of a school, and you are trying to figure out who broke the trophy case in the school lobby. The trophy case is the first thing people see when they walk into the school. It is filled with trophies and awards won by the school's teams. One morning, right before school starts, you are standing outside greeting students when you hear a loud thud in the lobby. When you go inside, you see that the glass case has been shattered, and many of the trophies are on the ground in pieces. Students have gathered, staring at the mess. To figure out what happened, you need to examine a variety of sources.

The Sources

Social media video: Within minutes of the trophy case being broken, a 3-second video of a student named Victor falling backwards into the case begins to circulate on social media. It has been posted by an anonymous account. Victor's backpack breaks the glass and knocks trophies onto the ground. The video is captioned, "Victor! Why did you break all the trophies?!?"

Victor: "I don't know what happened. We were just goofing around before school and then suddenly I hit the case. I definitely didn't mean to break anything."

Shawn's social media post: Another student, Shawn, posts on social media: "That was a crazy move by Victor to jump into the case!" The post has hundreds of likes.

Victor's father: Victor's father sends you an email. He writes, "Victor told me about the trophy case and the social media rumors spreading about him. My son would never intentionally break something. Someone must have pushed him. He feels terrible that the case and the trophies were broken. You better find out who is actually responsible!"

Angelica's social media comment: Another student, Angelica, comments on the video of Victor falling into the case: "I was nearby, but I didn't see what happened. Victor is pretty clumsy. I see him tripping in the hallway all the time. He must have tripped and fallen into the trophy case."

School newspaper: By lunchtime, the school's award-winning newspaper has published an article about the trophy case on its website. The headline reads, "Trophy Case Destroyed. Principal Investigates." The story explains that the trophy case was broken before school and that an investigation into what happened has begun. It quotes an unnamed student saying, "I saw some kids messing around before the trophy case got smashed."

Second social media video: After lunch, a second video begins to circulate on social media. It was taken in the lobby that morning before the trophy case was broken. In the video, Shawn and Victor are playfully pushing each other around. The video ends before the trophy case is broken.

Shawn: "I'm not sure what happened. All of a sudden Victor went flying into the trophy case. I posted about it on social media because I thought it would be funny."

The Broken Trophy Case Graphic Organizer

Source	Strength What is one reason why this might be a strong source for understanding what happened to the trophy case?	Limitation What is one reason why this might ***not*** be a strong source for understanding what happened to the trophy case?
Social media video		
Victor		
Shawn's social media post		
Victor's father		

Angelica's social media comment		
School newspaper		
Second social media video		
Shawn		

Final Report

What led to the trophy case being broken? (Please identify sources of information.)

Who do you think was responsible? Why?

THE INVESTIGATORS
LESSON #1: SUSTAINABILITY

Sustainability: Lateral vs. Vertical Reading Lesson Plan

Strategy Focus: Lateral Reading

The Problem: Students typically approach websites like other written texts, reading from top to bottom, in a traditional *vertical reading* pattern. They are also influenced by features internal to a website, like its URL, design, functionality, or content. However, this way of approaching digital content is often ineffective and needs to be explicitly challenged.

This lesson introduces students to *lateral reading*–using the broader internet to learn about a particular source. The lesson offers a direct contrast to what students learn from a website solely by reading vertically.

Materials:

- Computers for students (groups may share, if necessary)
- Guiding Questions for students
- If you are unfamiliar with *lateral reading,* we suggest that you watch two short videos before teaching this lesson: Civic Online Reasoning in Action (4 min., which shows how this approach works in real classrooms) and Sort Fact from Fiction Online with Lateral Reading (3 min., 50 sec., which provides an overview of the research behind this approach.) Note: these videos are intended for teachers, not students. Showing them to students before conducting this lesson compromises the sequence of activities.

Lesson Summary:

1. The evaluation of a website by reading vertically (teacher demonstrates)
2. The introduction of lateral reading and reading laterally about the same website (students practice in groups)
3. The evaluation of a social media post by reading vertically (teacher demonstrates) and then reading laterally (students practice in groups)

Timing:

In-school: This lesson is designed to be completed after students play the sustainability story in *The Investigators.* Completing the sustainability story in Minecraft will take approximately 15 minutes. Afterwards, this lesson will take between 45 and 90 minutes to complete.

Out-of-school: This lesson is designed to be completed after students play the sustainability story in *The Investigators.* Completing the sustainability story in Minecraft will take approximately 15 minutes. Afterwards, the entire lesson will take between 45 and 90 minutes. If

you would prefer to do a shorter version of the lesson, you could skip the Guided practice portion of the lesson (the evaluation of the Instagram post). The lesson could then be completed in 30 to 75 minutes.

Connection to *The Investigators* & Lesson Plan

1. Explain to students: *In the sustainability story in* The Investigators*, the school's sustainability score has gone down because students aren't doing a good job recycling. Imagine you wanted to investigate this issue, you went online to look for information about problems with recycling, and you came across this article about recycling centers closing in California (a screenshot of the article is also included in the PowerPoint).*
2. Solicit ideas for *vertical reading* by asking students: *If we were just going to stay on this website and try to evaluate it based on what we see on the site—what would you do? What parts of the site would you examine? How would you know if this site is a good place to find trustworthy information?*
    a. Encourage students to come up with as many ideas as they can. (They should stay on this site, pressing on links internal to the site.) Ideas include: the website's URL, the design of the site (colors, organization, fonts, etc.), the presence of advertisements, whether there is a named author, whether it has a publication date, information on its About page, the reports on its "Research" tab, whether it links to credible sources, and whether the contents of the article seem correct.
    b. Once you've generated a list with students, explain: *Today, we're going to see what we learn from evaluating a webpage by staying on it* (vertical reading) *and how that compares with an alternative approach to evaluating online information.*

3. Pass out guiding questions and continue to display this website: https://epionline.org/oped/recycling-centers-and-the-domino-effect-of-15/.
    a. Ask students to spend a couple of minutes evaluating the site by reading vertically.
    b. Demonstrate vertical reading.
    Note: We refer to this as "demonstrating" instead of "modeling" since the process you are showing students is not actually one that you want them to do. Instead, this part of the lesson is meant to surface inappropriate ways students may evaluate websites in order to explicitly debunk them and to show students why lateral reading works results in a more accurate assessment. You may raise the following points about the website:
        i. The domain in the URL is .org, which might cue students' trust—students may assume that .org URLs are automatically more reliable than .com websites. But we *should not* draw conclusions about whether something is trustworthy based on its top-level domain. The .org designation was one of the original domains created by the US government when they set up the domain system in the 1990s. From its inception, .org has been an "open" domain, just like .com (and unlike .gov or .mil). Even though many legitimate nonprofit organizations use the .org designation, so do many lobbyists and

scammers. To learn more about the dangers of assuming .org is trustworthy, see this short article.

ii. Website appearance is professional. Students might assume that a website's appearance is directly related to its reliability—the more professionally prepared, the more reliable the site. However, a website's appearance is not a good indicator of trustworthiness.

iii. The name of the website, Employment Policies Institute sounds authoritative. Students might assume that a website with a title or description that include words like "policy," "research," or "institute" is more reliable. However, the individual or group behind a website controls what appears on the site and can make themselves sound authoritative even if they are not.

iv. The website includes a lot of information, including dozens of research reports. Students might assume that the amount of information means the website is more reliable, but this is not the case.

v. There are no ads on the website, which students might assume makes it more reliable. However, the presence or absence of ads is not a good indicator of trustworthiness. (Consider, for example, that many reputable news websites include advertisements.)

c. After you're done, ask students:

i. *What did we learn about the organization behind this information?* Students should conclude that you learned little about the organization and nothing about the source's authority, other than what it says about itself.

ii. *If we had to decide right now, how would we decide how reliable this site is as a source of information?*

1. Because they've learned little about the organization itself, students should conclude that they don't have sufficient evidence to evaluate the reliability of the website as a source of information.
2. Emphasize that many of the features you noted while demonstrating vertical reading are not just unhelpful—they are actually *misleading*. Students should not draw conclusions about a site based on its URL, appearance, or the presence of specific elements in the contents of the site (e.g., absence of ads, lots of information, etc.)

4. Introduction to Lateral Reading: *When we come across online information, we should ask: Do I really know what I'm looking at? Who is behind the information? Our goal in asking these questions is to decide if we trust the source to provide information on the topic at hand.*

a. *Today, we're going to learn a strategy for investigating who is behind information: lateral reading. When we read laterally, we leave a website that we don't know and open new tabs in our browser in order to see what other websites say about the original website.*

b. Ask students: *What information do we need about an author or organization to help us decide if they are trustworthy?*

c. Prompt students to share their thinking. Help them consider multiple aspects of a source, including the sponsoring organization or author's perspective, expertise or authority, and potential motivations for providing the information.
d. *Our goal in reading laterally is to learn more about a website's perspective, authority, and potential motivations for providing the information. A source might have a strong perspective and very little authority, or it might have a balanced perspective and very high authority. We can use that information to form an initial judgment about how reliable it is as a source, and whether it's worth our time to take a deep dive into the content itself.*
e. *Information about an organization won't always be easy to find online, and we might not get exact answers. However, we can learn more about these things when we read laterally than we would if we tried other ways of evaluating websites. We won't always make perfect decisions, but lateral reading helps us make better ones.*
f. *Don't take my word for it. Today we're going to contrast what we learn from lateral reading with what we learn from other ways of evaluating online information.*
g. Next, instruct students to work in groups to read laterally about the group behind this website, using the guiding questions to help them. Have them enter the name of the organization into their browser: "Employment Policies Institute"
h. After groups have read laterally, ask students: *What did you learn about the person or organization behind this information?*
    i. Although the Employment Policies Institute refers to itself as a non-profit, non-partisan research organization that sponsors research done at universities, lateral reading provides a different view of the organization.
    ii. A *New York Times* article notes, "The nonprofit group is run by a public relations firm that also represents the restaurant industry."
    iii. A *Salon* headline reads, "Corporate America's new scam: Industry P.R. firm poses as think tank!"
    iv. The organization is run by Richard Berman and Company, a public relations firm that works on the behalf of corporate interests. Berman has been profiled on 60 Minutes and Last Week Tonight with John Oliver.

5. Guided practice: Display this social media post: https://www.instagram.com/p/CRh5TE9Hy2w/ (A screenshot is also included in the PowerPoint.)
    a. Demonstrate vertical reading. You may raise the following points about the post:
        i. The post includes a claim about wildfires and climate change in a region of Canada. The photo appears to be made by a single person on her cell phone; that is, it does not appear to be a professional photograph. Without investigating these more deeply (e.g., verifying the claim individually), students might assume that it is unreliable or automatically accept it as fact because it sounds like other claims they have heard before about wildfires in other regions of the world.

ii. The photo has 284 likes. Students may draw conclusions about the engagement numbers—many students may assume that this level of engagement reduces the post's reliability. However, level of engagement is not a reliable indicator of trustworthiness.
iii. The person who posted the video, Katharine Hayhoe (@katharinehayhoe) describes herself on Instagram as a "Climate Scientist & Chief Scientist @nature_org." Because she says she is a climate scientist, students may think the video is more reliable, but we cannot conclude she is a scientist without verifying this through lateral reading.
iv. @KatharineHayhoe has over 22k followers on Instagram, which students may conclude makes her more reliable as a source of information, but the number of followers a social media account has does not determine how trustworthy the account is.

b. After you're done, ask students:
    i. *What did we learn about the person or organization behind this information? Do we know anything about their perspective* (e.g., do they have a strong perspective)*? How authoritative are they* (e.g., are they in a position to offer accurate information about climate change)*?*
        1. Students should conclude that you learn little about the source's perspective or authority, other than what she provides.
    ii. *If we had to decide right now, how reliable do you think this site is as a source of information?*
        1. Because they've learned little about the post's perspective and authority, students should conclude that they don't have anything solid on which to base a decision about the Hayhoe's reliability as a source.
        2. Emphasize that many of the features you noted while demonstrating vertical reading are not just unhelpful—they can be misleading. Students should not draw conclusions about a post based solely on the number of followers, the appearance of the video, or the poster's description of themself.
c. Next, instruct students to work in groups to read laterally about the post, using the guiding questions to help them.
d. After groups have read laterally, ask students: *What did you learn about the person or organization behind this information?*
    i. According to Wikipedia, Katharine Hayhoe (@katharinehayhoe) is "an atmospheric scientist and professor of political science at Texas Tech University." It adds that "she has authored more than 120 peer-reviewed publications." These claims can be verified by sites including those of the Texas Tech University Department of Political Science, *The New Yorker*, Google Scholar, and NPR. Despite the fact that the Instagram account or the picture may not *appear* reliable, Hayhoe is a reliable source of scientific information about global warming.

6. Class discussion. Ask students:
    a. *Who learned more—me from vertical reading or you from lateral reading? What explains that?* Help students understand that reliability isn't based on surface level features, so you can't rely on features like a URL or appearance to tell you definitively that something is or isn't reliable. Instead, we want to learn as much as possible about who is behind the website or post—particularly their perspective and authority. We do this by leaving an unfamiliar website and using the open internet to check the internet.

THE INVESTIGATORS
LESSON #1: SUSTAINABILITY
STUDENT GUIDING QUESTIONS

The Investigators
Sustainability
Guiding Questions

Source 1: https://epionline.org/oped/recycling-centers-and-the-domino-effect-of-15/

Vertical Reading:

1. When we read vertically, what features did we use to evaluate the website?

2. What did we learn about the organization behind this information by reading vertically?

Lateral Reading:

1. What organization is behind the information featured on the website epionline.org?

2. What can you learn about the organization by reading laterally?

3. What sources did you use to learn about who is behind this information?

   How do you know that these are trustworthy sources?

4. Based on this information, how reliable is this source of information? Explain.

Source 2: https://www.instagram.com/p/CRh5TE9Hy2w/

Vertical Reading:

1. When we read vertically, what features did we use to evaluate the post?

2. What did we learn about the person behind this information by reading vertically?

Lateral Reading:

1. What person is behind this information?

2. What can you learn about the author by reading laterally?

3. What sources did you use to learn about who is behind this information?

   How do you know that these are good sources?

4. Based on this information, how reliable is this source of information? Explain.

Reflection:

Did we learn more from vertical reading or lateral reading? Explain.

THE INVESTIGATORS
LESSON #2: NEW SCHOOL SPORT

Verifying a Claim Lesson Plan

Strategy Focus: Search terms

The Problem: When students go online to search, they encounter sources of varying quality. Some make claims without evidence. Others have a vested interest in their claims and stand to benefit financially or otherwise. Still others are claims pushed by advocates, who tilt evidence in the direction of their favored position. It's hard to know what to believe. Students often struggle to sort through conflicting claims. Moreover, they often lack strategies for formulating search terms that yield better, less biased results.

This lesson introduces students to verifying a claim by searching for and evaluating sources of varying quality. It also addresses how to choose effective search terms. Finally, it explores the issue of authority and the criteria that should be considered when verifying a claim.

Materials:

- Lesson PowerPoint
- Laptops for students (groups may share if necessary)
- Guiding questions for students

Lesson Summary:

1. The connection to *The Investigators*
2. The evaluation of an article with a clear point of view
3. The difference between biased and neutral search terms
4. The evaluation of an academic article with links to rigorous research supporting its claims

Timing:

In-school: This lesson is designed to be completed after students play the sports story in *The Investigators.* Completing the sports story in Minecraft will take approximately 15 minutes. Afterwards, this lesson will take between 45 and 90 minutes to complete.

Out-of-school: This lesson is designed to be completed after students play the sports story in *The Investigators.* Completing the sports story in Minecraft will take approximately 15 minutes. Afterwards, this lesson will take between 45 and 90 minutes to complete.

Connection to *The Investigators*

In the sports story in The Investigators, Mr. Kirkland wants the school to adopt archery as its new sport because it will "encourage students to learn about history." There is a

certain logic to Kirkland's claim: Bows and arrows have been around since the dawn of humanity. It is not a stretch to think that participating in archery could spur students' interest in history.

We often hear claims like Mr. Kirkland's and think, "Sounds plausible, but how would we really know?" It's at this point that someone pulls out their phone and starts to check online. In this lesson plan, we'll examine a claim that can be checked online. But first, as a way to begin the lesson, have students respond to a question about Mr. Kirkland's claim.

Lesson Plan

1. Project the Opening Activity slide from the PowerPoint and ask students to choose one of the answers and jot down a brief sentence justifying their answer:

   Which of the following sources would provide strong evidence to support Mr. Kirkland's claim that "archery encourages students to learn history"?

   a. An infographic from the International Association of Archery, which says that students who are required to take archery are 50% more passionate about studying history.
   b. A story from The *Wall Street Journal* about a famous historian who pursued archery in middle school. The article quotes the historian saying, "Archery is responsible for my deciding to choose history as a career."
   c. An article on Harvard University's website that says that among Harvard students who choose archery as their physical education elective, almost all major in history.
   d. None of the above.

2. Ask students to raise their hands to indicate which answer they selected.

3. Debrief the answers:

   a. Incorrect: The International Association of Archery is not an objective source when it comes to archery since they stand to gain by promoting information about the benefits of archery. Plus, it is not clear where the organization got its data. You would want to search for a more objective source.
   b. Incorrect: Even though the *Wall Street Journal* is a reputable publication, this article is about only one person. It would be wrong to generalize from her experience to everyone.
   c. Incorrect: Even if the Harvard article is correct, it doesn't mean that participating in archery *causes* students to like history. It could be that students who like archery also happen to like history. One doesn't necessarily cause the other.
   d. Correct: None of these sources provide solid backing for Mr. Kirkland's claim.

4. Introduction to the lesson: *Today we are going to explore sources of information and their relationship to the issue we're investigating. In the game, Mr. Kirkland made claims about archery and its benefits. We're going to explore a similar kind of claim but this time about a different game: Whether chess makes you smarter. We'll begin by reading the article "Benefits of Chess."* (A version of the page has also been archived at the Wayback Machine.)

   Hand out the Guiding Questions and ask students to complete the questions in small groups.

5. Debrief the Guiding Questions with students:

   a. According to the article what are the main benefits of playing chess? Students should note that the article claims that playing chess leads numerous benefits including higher IQ, improved memory, more creativity, enhanced cognitive function, decreased risk of dementia, and better problem-solving skills.

   b. What references are provided for the author's claim? Locate the links he uses to anchor his claims. Students should note that the article doesn't cite any sources for its series of claims.

   c. How objective is this source of information? Students should understand that this is not an objective source of information. OCF Chess is a website focused on playing chess and promoting its benefits.

   d. Is this article a trustworthy source for learning about the claim, "Playing chess makes you more intelligent"? There are a variety of reasons why this source is problematic: (a) dozens of claims are made without any evidence offered; (b) we know little about this website other than it seems to be aimed at chess aficionados and those who are already predisposed to touting the benefits of chess; (c) even if we wanted to follow up on these claims, there are no footnotes or other links to evidence

   e. This article is written by someone named Doug Barlow. Is Doug Barlow an objective source for the question, "Does playing chess make you more intelligent?" Why might Mr. Barlow be inclined to say it does? Doug Barlow clearly "has skin in the game." In other words, he's invested in making chess seem like it has lots of benefits. To emphasize this point, project the slide (p. 2 in the PowerPoint) with his bio and ask students why he might not be the most objective source.

6. Choosing search terms: In many ways, our browser acts as a mirror, reflecting back to us what it thinks we want to see. Few students understand this. Students need to know that if they want unbiased results, they have to choose neutral search terms. The best way to demonstrate this point is for them to see just how slight variations on search strategies yield dramatically different results.

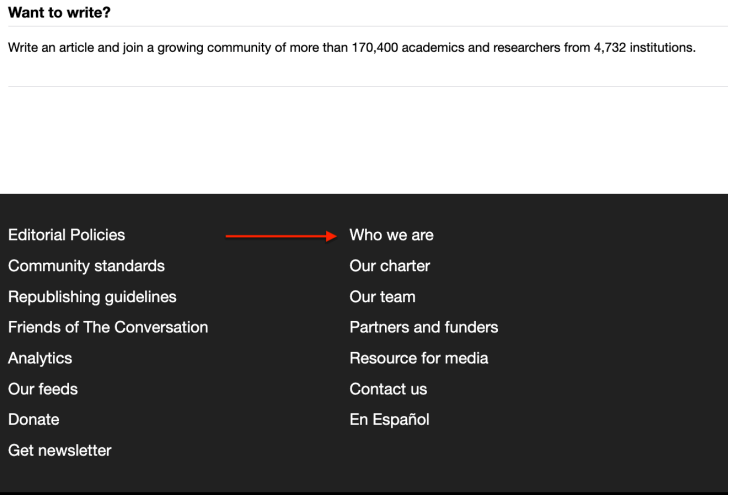
7. Examine search results: Ask students to investigate the different results returned by these search terms:

    a. "Does chess make you smarter"
    b. "Does chess not make you smarter"
    c. chess AND intelligence

    (See PowerPoint for screenshots of all three search results.)

    Either (1) put students in small groups to conduct these searches; or (2) review the search results as a whole class using the screen shots in the PowerPoint and debrief each together. (Because search results change constantly, you might choose to have students examine the static screenshots that were taken in September 2023.)

8. Among the top results of the "chess AND intelligence" search is this article from a publication called *The Conversation.* (The same article also appears at the top of the results for "Does chess not make you smarter".) But before you have students wade into the article, ask them what they know about *The Conversation*. Where would they start to find out about it?
    a. Ask them to look at the bottom of the page.



    b. At least on the surface, it looks like a publication in which researchers convey their results in ordinary language to a broader audience. But as we noted in the first lesson, we don't want students to rely on what a website says about itself without engaging in a brief exercise of lateral reading. Ask students to look at the

entry for *The Conversation* on Wikipedia to see if it corroborates what the source says about itself. (It does.)

9. Small group article evaluation: Direct students to read the article from *The Conversation* and complete the rest of the Guiding Questions.

10. Debrief: As a whole class, discuss students' responses to the guiding questions:

    a. What claims does this article make about chess? It concludes that it "is unlikely chess has a significant impact on overall cognitive ability."
    b. What references are provided? The article links to a range of research reports that have addressed this issue.
    c. Who are the authors? What are the authors' qualifications for making the claims that they do? A psychology professor and a PhD student from the University of Liverpool. Their academic backgrounds make them well suited to investigate these issues.
    d. Does this article rely on a single study? No, it examines multiple studies and synthesizes across them.
    e. Why is this article a better source for claims about the benefits of chess than the first article you examined? It provides evidence from a series of authoritative sources, and it is written by individuals with expertise in evaluating the rigor of academic research.

11. Lesson Takeaways:
    a. When verifying a claim online beware of partisans or people "with skin in the game." Look for sources that at least try to be objective.
    b. When examining a claim, look to see if it has links or footnotes to evidence. Sometimes this evidence can be misleading (or even made up), but at least having links allows you to follow up and investigate further. Without links or footnotes, you are forced to take the author's word for it.
    c. Your browser is a mirror–it reflects back to you what you feed into it. If you want a less biased search, remember to choose neutral search terms.
    d. When examining a claim based on evidence, beware of single studies. Look for articles that provide a bird's eye view of multiple studies, synthesizing across them

THE INVESTIGATORS

LESSON #2: NEW SCHOOL SPORT STUDENT GUIDING QUESTIONS

The Investigators
New School Sport
Guiding Questions

"Benefits of Chess"
https://ocfchess.org/does-chess-help-in-real-life/

According to the article what are the main benefits of playing chess?

What references are provided for the author's claim?

How objective is this source of information?

Is this article a trustworthy source for learning about the claim, "Playing chess makes you more intelligent"?

This article is written by someone name Doug Barlow. Is Doug Barlow an objective source for the question, "Does playing chess make you more intelligent?" Why might Mr. Barlow be inclined to say it does?

The Conversation
https://theconversation.com/does-playing-chess-make-you-smarter-a-look-at-the-evidence-76062

What claims does this article make about chess?

What references are provided?

Who are the authors? What are the authors' qualifications for making the claims that they do?

Does this article rely on a single study?

Why is this article a better source for claims about the benefits of chess than the first article you examined?

THE INVESTIGATORS
LESSON #3: SCHOOL ELECTION

School Election: Evaluating Videos Lesson Plan

The Problem: Online videos are easy to create and distribute. Evidence presented via video is becoming an increasingly popular way to support claims online. However, videos can be especially challenging to evaluate effectively. Too often, we are convinced by what we see (or think we see) and do not carefully consider how the video could misrepresent its subject through selective editing and ripping words from context.

This short lesson helps students practice analyzing video evidence. Students complete a task that asks them to evaluate a short video that makes a claim about a noted public figure and supports it with selectively edited video evidence. Then they watch an unedited version of the same video and ask how the broader context influences their understanding. They then read and discuss an article from a trustworthy source about the deceptive editing of this video.

Materials:

- Social media video PowerPoint slide
- Link to unedited video of Thunberg's interview
- Link to *Reuters* article for students
- Guiding Questions

Lesson Summary:

1. Students complete questions about social media video PowerPoint slide
2. Students watch, analyze, and discuss an unedited segment of Thunberg's interview
3. Students read and discuss a news article about the selectively edited interview with Greta Thunberg

Timing:

In-school: This lesson is designed to be completed after students play the election story in *The Investigators.* Completing the election story in Minecraft will take approximately 15 minutes. Afterwards, this lesson will take between 30 and 60 minutes to complete.

Out-of-school: This lesson is designed to be completed after students play the election story in *The Investigators.* Completing the election story in Minecraft will take approximately 15 minutes. Afterwards, this lesson will take between 30 and 60 minutes to complete if done as a group. If students are completing the lesson independently, it will take 20-40 minutes to complete (it will not take as along because students will not be discussing the answers with peers).

Lesson Plan and Connection to *The Investigators*

1. Explain to students: *In* The Investigators*, one of the stories is about how Harry is accused of posting horrible remarks about his opponent on social media. The IT guy says that the post came from computer 13 in the computer lab. Unfortunately, the surveillance cameras in the lab were turned off. Today, we are going to think about how to evaluate videos that we see online.*
2. Display the social media video PowerPoint slide and play the video for students. Ask students to answer the questions in the Guiding Questions individually.
3. Explain to students: T*he task you just completed asked you to evaluate a video. Did anyone recognize the person being interviewed? Were you surprised by what she said? Why?* If necessary, ask students: *Did you expect her to say that climate change doesn't exist?*
4. Explain to students: *Now we are going to explore that video in more detail by watching a longer portion of it.*
5. Watch the full context of Thunberg's interview, in the PowerPoint. https://youtu.be/0HUzN9PTQn0?si=s3TljRK2z4ejRyB8&t=115
    a. The video from 1:55 to 3:06 shows the statements Thunberg made in the edited video as well as what she said after them.
    b. After watching the unedited version of the video, discuss as a class or ask students to work in small groups to answer the following questions. (The questions are also in the Guiding Questions handout.)
        i. *Does the fuller version of the video change how you think about the original video? If so, how?*
        ii. *Why might the original video have been edited? What might have been the motivations of the people who created it?*
        iii. *How reliable is the source of this second video?*
            1. This video was posted by MSNBC, the outlet where Thunberg actually gave the interview. MSNBC is a prominent, well-established news organization. There is no evidence that the video has been edited, and combined with its source, the video is likely a trustworthy representation of Thunberg's interview.
6. Ask students to read a news article about the Thunberg video and discuss the following questions. (The questions are also in the Guiding Questions handout.)
    a. *What happened with the video of Greta Thunberg?*
    b. Is this article a reliable source of information about what happened with the Thunberg video?
        i. Reuters is one of the largest news organizations in the world. It has high journalistic standards and prints retractions or corrections if it makes mistakes in reporting.
    c. What questions should we ask about video evidence to ensure that we aren't duped by it?

i. Discuss how to approach evaluating videos. Ultimately, in evaluating video evidence, we should ask the same questions that we ask when we evaluate other forms of evidence: Who's behind the information? Are they reliable? Does the evidence directly support/relate to the claims being made?

d. *What does the fact that so many people were persuaded by this video tell you about video evidence?*
   i. Help students brainstorm features that might make video evidence particularly challenging to evaluate. For example, videos give us the sense of really "seeing what happened," and it might be harder for us to imagine how what we see could be distorted or inaccurate.
   ii. A point to leave students with: The shorter a video clip, the more important it is to ask whether the clip has been selectively edited, often to make the exact opposite point that the speaker intended to make.

THE INVESTIGATORS
LESSON #3: SCHOOL ELECTION
STUDENT GUIDING QUESTIONS

The Investigators
School Election
Guiding Questions

Social Media Video
What is Greta Thunberg's main point in this video?

Given what you know about Greta Thunberg, does this video seem consistent with her beliefs? Explain.

Fuller Version of Video
Does the fuller version of the video change how you think about the original video? If so, how?

Why might the original video have been edited? What might have been the motivations of the people who created it?

How reliable is the source of this second video?

Reuters Article
https://www.reuters.com/article/factcheck-greta-clip/fact-check-isolated-clip-of-greta-thunberg-saying-climate-change-does-not-exist-is-misleading-idUSL2N2O52US

What happened with the video of Greta Thunberg?

Is this article a reliable source of information about what happened with the Thunberg video?

What questions should we ask about video evidence to ensure that we aren't duped by it?

What does the fact that so many people were persuaded by this video tell you about video evidence?