**Lesson Plan: Social Media Smarts**

**Learning Overview:** Social media is part of our everyday lives. It provides entertainment, news, reference information, and so much more. However, not all the content we find on social media is accurate. In this activity, students will investigate the prevalence of misinformation on popular social media platforms. In their investigation, students examine how platforms’ biases and algorithms influence the type of content social media users see and the level of misinformation displayed.

**NGSS-DCI:** HS-ETS1.

**Paired Articles:**

*Science News:*“[Top 10 tips for how Gen Z’ers can get the best online experiences](https://www.snexplores.org/article/top-10-tips-for-best-online-experiences)”

Readability Score:7.2

**Recommended Teacher Reading:** “[Executive Summary: Learning to Find Trustworthy Scientific Information](https://medialiteracynow.org/document/executive-summary-learning-to-find-trustworthy-scientific-information/)”

**Directions**: In this activity, students will explore the prevalence of misinformation on social media through a class-wide research project. Students will work in groups to search for scientific topics on designated social media platforms or websites. The class will then reconvene to compile data and compare the results from each platform. Using their results, students will create educational flyers that teach their peers how to identify misinformation online.

In preparation for this activity, the Science News Learning lesson plans “[Being mindful of misinformation](https://www.sciencenews.org/learning/guide/component/being-mindful-of-misinformation)” and “[How bias affects scientific research](https://www.sciencenews.org/learning/guide/component/how-bias-affects-scientific-research)” may be covered in class in part or in full. At a minimum, students should be able to define misinformation and biases before beginning the “Social Media Smarts” activity.

At the end of this activity, students will create social media guides to be distributed throughout the school. Each guide will be in the form of a flyer. As such, make sure that any necessary materials are prepared prior to the second day of the activity.

The inspiration for this activity came from Media Literacy Now’s recent report “[Learning to Find Trustworthy Scientific Information](https://medialiteracynow.org/media-literacy-now-releases-report-calling-for-k-12-science-education-to-include-lessons-on-how-to-find-trustworthy-scientific-information/).” We recommend reading the report’s goals and next steps to understand how best to encourage media literacy in today’s students.

**Approximate class time:** 2 class periods

**Supplies:**

* Computers
* Students’ cell phones
* Student worksheets
* Pencils
* Whiteboard
* Dry-erase markers
* Paper
* Crayons/Pastels/Color Pencils/Markers

**Misinformation**

To start this activity, ask students to form three equally sized groups and answer the following questions about misinformation. If the Science News Learning lesson plans “[Being mindful of misinformation](https://www.sciencenews.org/learning/guide/component/being-mindful-of-misinformation)” and “[How bias affects scientific research](https://www.sciencenews.org/learning/guide/component/how-bias-affects-scientific-research)” were recently covered in class, students should have a general understanding of misinformation prior to the start of this activity. If these lessons were not covered in class, hold a class discussion about misinformation prior to starting this activity. A guiding question for this discussion could be, “What is misinformation?” Misinformation should be defined as falsehoods that appear to be facts but that do not have any supporting data or evidence. Biases should be defined as prejudices that can distort the outcome of a situation or the consideration of information.

1. When browsing social media, how can you tell if content is providing misinformation? What is the best way to treat such information?

*Student answers may vary. Content that contains misinformation often comes from unreliable accounts or non-experts in the specified field. It may also include advertisements or present an opinion as fact. If the information comes from an account known for spreading misinformation or is in an ad, I will assume that it is likely inaccurate, misleading, or is misinformation.*

2. What do you use social media for? What can it be used for?

*Student answers may vary. I use social media to connect with friends, watch funny videos, hear about the news and learn new recipes. Social media can be used to create connections or can be used for education or entertainment.*

3. How do you learn while watching a video? What senses do you use to take in information while watching a video?

*When watching a video, you see information presented visually, which may include images, and listen to information presented audibly through sounds and speech.*

4. Why might identifying misinformation in a video be more difficult than identifying misinformation in an article?

*While both articles and videos include a narrative that must be fact checked, videos often include images that can be misleading, doctored, or altered. These images can be convincing and are difficult to fact check. Images can also be selectively used to show one perspective of different events or situations. That can mislead the viewer into thinking they represent the entire situation. Along with this, images do not state fact and instead must be interpreted by the viewer. If the viewer has a bias, the image will likely be interpreted to align with that bias.*

5. What is the relationship between entertainment and educational content? Can content provide both? Explain.

*Entertainment is meant to amuse and is often designed to leave viewers with an emotional response, such as joy, laughter, or anger. Educational content is designed to impart a distinct message to its viewers. In news sources and on social media, the line between entertainment and educational content can become blurred. Good educational content can evoke an emotional response using facts. And some entertainment sources amuse while sharing accurate information. But sometimes sources of entertainment evoke emotional responses using misinformation.*

**Social Sources**

Before the end of class, assign each student group a social media or media platform. Recommended platforms and websites for this activity are TikTok, YouTube, and Google. If any platforms other than TikTok, YouTube, or Google are used, make sure that these platforms can be used in an untracked window, like Incognito Mode. If students use tracked windows or their personal accounts, they will not have accurate data.

Once student groups have been assigned a platform, introduce this section of the activity as a class-wide study. In this study, students will be investigating the prevalence of misinformation on their assigned platform. To limit the number of variables in this study, identify a specific educational topic for students to search. This topic should be frequently discussed on social media platforms. Suggested topics include COVID-19, climate change, vaccines, antibiotics, health, dietary supplements, or nutrition. However, any educational topic could be selected.

Assign the following questions for students to answer as homework. While students will be working in groups again in class, this homework should be completed individually.

Watch each of the following educational videos prior to answering the homework questions:

<https://www.tiktok.com/@sciencenewsofficial/video/7260119214781091118?lang=en>

<https://www.tiktok.com/@nautiluslive/video/7283980985983667499>

<https://www.tiktok.com/@alexisnikole/video/7308475761420193070>

1. How can you tell if the information presented in these videos is accurate?

*I would need to have a prior understanding of the information presented or I would have to fact check the information using reliable sources.*

2. Using the videos as references, who is able to post educational material on social media?

*Anyone is able to post educational materials on social media. Posting educational materials is not limited to reputable sources.*

3. Can a verified account post misinformation? Why or why not?

*A verified account can post misinformation. This is because verifications are sometimes a paid-for service, depending on the platform. It does not indicate anything about the trustworthiness or reliability of the account.*

4. How do social media platforms determine what you see on your “page” or “feed”?

*Social media platforms look at the content you click, watch, like or otherwise interact with. Using these data, algorithms will adjust your content so that you see more content that’s similar to or related to content you’ve interacted with before. The goal of the platform and its algorithms is to maximize how much you click, watch, and interact with the platform.*

5. While Google is not a social media platform, it is included in this study. How might Google and other search engines be similar to a social media platform?

*Google and other search engines also pay attention to what you click, watch, or otherwise interact with. This can alter the type of results you receive in a search query.*

6. Using your regular browser or social media account, open the social media or website selected for your group. What is the first content-based information that you see?

*Student answers may vary. When I opened TikTok using my personal account, the first content-based information I saw was a blind person explaining how their guide dog adapts to new environments.*

7. Scroll and observe at least 10 posts on your “page” or “feed” and identify the main content areas or topics.

*Student answers may vary. While scrolling on TikTok, I had a lot of educational, supernatural, and art-based content.*

8. Open the social media application selected for your group in an untracked window, such as Incognito Mode. Why might it be important to re-open the social media platform in an untracked window?

*Because social media platforms record the data you interact with, you view a custom feed when using the platform. An untracked window does not have records of your data, so it gives you an unfiltered view of the information posted to and pushed by each platform.*

9. How might your personal feed differ from the feed you see in an untracked window?

*The feed in an untracked window will contain a wider breadth of content, as it does not have any data to draw from to create a customized feed. Unlike the personal feed, it will bounce from topic to topic, trying to find a post that causes you to engage with the content, either through likes, comments, or views.*

10. What do you know about your search query assigned by your teacher? If you are unfamiliar with the topic, use reliable sources to learn more.

*Student answers may vary. Our topic is nutrition, and I know that it is important to have a balance of carbohydrates, proteins, fats, and fiber in your diet. Your diet also needs to be rich in vitamins and minerals.*

11. Search your group’s topic using your assigned social media platform in the incognito window. For each post you observe, record whether you believe the information presented is accurate, inaccurate, or whether you are unsure. Observe at least 10 posts. If your assigned social media is YouTube, you may watch excerpts of each video. For each post, take notes on what you observe that may indicate if it is accurate, inaccurate, or makes you unsure.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Accurate | Inaccurate | Unsure |
| # of Posts on Social Media Platform: | *5* | *1* | *4* |
| Notes/Observations: | *These sources all promote focusing on having a balance between food groups.* | *This source promotes no carbs.* | *These posts all promote supplemental nutrients and vitamins; this could potentially be good, but I would need to know more to be sure.* |

**Comparing Content**

The following class period, ask students to meet with the rest of their group to answer the following questions, exchange notes, and compile their data. Students should compile their data using the table near the bottom of their worksheet for this section of the activity. Each group will record their data in a central location accessible by all groups. Designate this location, which may be a centrally located whiteboard, for students ahead of time. Or use Google Sheets to compile data for the class. This allows for easy graphing, comparisons, and identification of trends across social media platforms.

As students answer each of the questions in this section of the activity, walk around the classroom and encourage students to thoroughly discuss their answers.

1. Referring to question 7 in the “Social Sources” section of the activity, compare the topics you identified on your feed with the other members in your group. How did your feeds vary?

*Student answers may vary. I had a lot more educational content than my other group members. A lot of my group members had more content about fashion and cosmetic products.*

2. Why might your feeds display different content?

*My feed may display different content because I am interacting with different content than my peers. For example, I might watch the entirety of videos that my peers scroll past, or I may like or comment on different posts than them.*

3. Based on your prior knowledge and experience, what does it mean when a social media post is called

clickbait?

*A social media post is called clickbait when its title or picture does not accurately represent the content of the post.*

4. Did you encounter any clickbait when using your assigned social media platform?

*Student answers may vary. I did experience clickbait while using TikTok. Many of the videos I watched were presented as educational videos when in fact, they were advertisements.*

5. Why might people post clickbait? What do you think is the purpose of clickbait?

*People may create clickbait because it increases engagement. Many people are not willing to sit through advertisements. Social media posts can also, on occasion, generate revenue. Posting clickbait that increases engagement can increase profit.*

6. How might clicking clickbait alter the content you receive on your feed?

*When you engage with clickbait, you will likely receive more clickbait on your feed. It becomes a positive feedback loop.*

7. Compile the data for your group and record it below. Once you have compiled your group’s data, record the data in your class’s central location.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Accurate | Inaccurate | Unsure |
| # of Posts on Social Media Platform | 32 | 8 | 20 |
| Notes/Observations: | *These sources all promote focusing on having a balance between food groups or are focused on eating foods that are healthy along with foods that make you happy.* | *Many sources promote removing or limiting one of the vital food groups or promote relying on supplements to meet any nutritional needs.* | *These sources all promote some sort of nutritional “quick fix.” Some parts of these “quick fixes” sound good, but it also sounds like the posts are pushing a product.* |

8. Explore the options available to you on your platform. Can you find a way to report content for misinformation? If so, what is the ease of reporting misinformation?

*Student answers may vary. On the TikTok app, you can report content using the share button. Clicking the share button gives you an option to “Report” content. Once the “Report” button has been selected, you can specify that the content contains “Misinformation.” While it is not hard to report content, it is hidden within the share button, which makes it slightly harder to find.*

9. How does your platform filter out misinformation? Use the information provided by your platform if available.

*Student answers may vary. According to TikTok, they filter out medical, climate change, and election misinformation and other misleading content using teams to monitor for specific disinformation campaigns and using “automated technology” and user reports to identify misinformation. TikTok also states that they reduce the spread of content that may or may not be accurate.*

10. What are some steps that the platform could take to improve its misinformation filtering system?

*Student answers may vary. TikTok supposedly uses “automated technology” to help detect misinformation, but the procedure it uses is not clear. Right now, it sounds like most of TikTok’s misinformation filtering system relies solely on misinformation reports from users. To improve their system, they should invest more in their “automated technology” and reduce the spread of anything that it flags as potential misinformation until the content has been verified as accurate.*

11. Look at the compiled data from your group and look for any overall trends. What did you notice?

*Student answers may vary. We found a lot of information that we believed was accurate and we were unsure about a lot of other information. The information we were unsure about appeared to include a mix of accurate information and misinformation. The accurate information was only clear because we had strong background information. Without strong background information, we may have assumed some of the “unsure” posts were accurate.*

12. Compare your data with the other two groups. Are there any similarities? Any differences among platforms?

*Student answers may vary. While on TikTok we saw more ads that pushed questionable products, the group that explored YouTube saw more clickbait. Both ads and clickbait contained information we were unsure about. Google also provided a lot of conflicting and unreliable sources at the top of its search results. However, Google also provided results that were easily identifiable as reputable sources. YouTube also provided reputable sources high on the search list. On the other hand, TikTok prioritized view count over reliability and did not push for reputable sources to be high on the search list.*

**Fact-filled Flyers**

Each group should split into two smaller groups, one that focuses on how users can identify misinformation on their assigned platform and another that focuses on how their assigned platform identifies and filters out misinformation. Assign each group their focus to avoid students creating duplicate flyers.

The groups that focus on how users can identify misinformation should create a flyer that defines misinformation, explains how to identify misinformation, and describes how user interaction with misinformation alters algorithms and can form biases.

The groups that focus on how their assigned platform filters and identifies misinformation should create a flyer that explains how their assigned social media or media platform currently filters misinformation, describes how users can flag misinformation to help filter content, and proposes how the platform’s filtering system could be improved.

Each flyer should be platform-specific and should contain aesthetically pleasing graphics, as they will be posted around the school. Once completed, print each of the flyers and hang them in various locations around the school. For the best visibility, post flyers in pairs, with each platform’s flyers posted together in several locations.