Curriculum connector

Social Media and Misinformation

Social media and the spread of misinformation

Many adults, teens, and children are connected to social media. Some students and adults receive news updates via social media, and unfortunately social media can be one way that misinformation is shared, either intentionally or unintentionally. Students will explore data to discover information about influencers on social media, along with the dangers and trends around the spread of misinformation. Afterward, students will discuss solutions to address the problem of misinformation on social media.

Information overload amplifies cognitive bias

Research has found that as the quantity of social media information increases, the quality of the information shared decreases[1]. This inverse relationship stems from peoples' limited time and attention when faced with information overload. The enormity of the information shared on social media ultimately has a direct correlation to the quality of the resharing selection process. In the following activities, students will pose questions and use statistical data to evaluate the impact of social media influencers on cognitive bias and the spread of misinformation. This set of activities supports practicing statistical analysis and incorporates the application of source evaluation for credibility and accuracy.

Top 10 influencers across Instagram, YouTube and TikTok

Making Personal Connections: How Brands are Leveraging Social Influencers, Nielsen

Activity idea #1: Students will start by reviewing the statistical information found in "Making Personal Connections: How Brands are Leveraging Social Influencers" article. Next, to better understand the data, encourage the students to select three areas of interest to graphically represent using a line graph, bar graph, or pie chart and create a visualization that depicts the data. For instance, a student might select social media, email, podcast, and print to compare and contrast. Using the data visualization, encourage students to write 7–10 questions and the corresponding answers that will be later shared with a classmate.

Teacher note: *It may be helpful to review the purpose of each graphical representation to assist students in selecting the most appropriate way to visually represent the data.*

1 Scientific American, https://www.scientificamerican.com/article/information-overload-helps-fake-news-spread-and-social-media-knows-it/

Activity idea #2: The first Common Core State Standards Mathematical Practice states, "Make sense of problems and persevere in solving them" ("Standards for Mathematical Practice"). Before providing the students with the data set, ask students to share their thoughts on which social media platforms are most influential and why. Present the students with "The Influence of the Influencers" data and ask them to write a minimum of 5 observations and 5 questions they have from analyzing the data set. Students will partner and share their thoughts. Next, partner sets will select two social media platforms and create their own survey related to what people perceive as the differences between these two platforms' abilities to influence and provide reliable information. For instance, students might choose to survey their peers to compare the influence and reliability of information that they find on Twitter compared to Instagram. Using the data generated, students will present their findings in graphical representations, research and incorporate the concepts of cognitive bias, misinformation, and disinformation, and identify three claims that can be identified about the use of social media and influencers. This presentation will then be shared and discussed as a class.

Teacher note: *During whole group discussion, have students identify less credible vs. more credible sources.*

Connects to:

- Career pathways:
    - Social media influencers across genres
    - Statistical analysis
    - Science, Technology, Engineering & Mathematics (S.T.E.M.)
- National standards:
    - Using data to draw inferences
    - Analyzing data
    - Posing questions
    - Evaluating claims

Visual/Graphic: Nielsen, Making personal connections: How brands are leveraging social influencers. Charts and graphs are provided below for settings without internet access.

THE INFLUENCE OF THE INFLUENCERS

Tracking the impact of the top 10 influencers across Instagram, YouTube and Tiktok

Analysis of the top 10 most engaging profiles by engagement rate, active in the last 3 months, on Instagram, TikTok and YouTube as of Sept. 21, 2021. Selected profiles were required to meet a minimum of 1 million of followers to be included in the ranking.

Source: Nielsen InfluenceScope

https://www.nielsen.com/us/en/insights/article/2021/making-personal-connections-how-brands-are-leveraging-social-influencers/

Largest social media following across various platforms

The World's Top 50 Influencers Across Social Media Platforms, Visual Capitalist

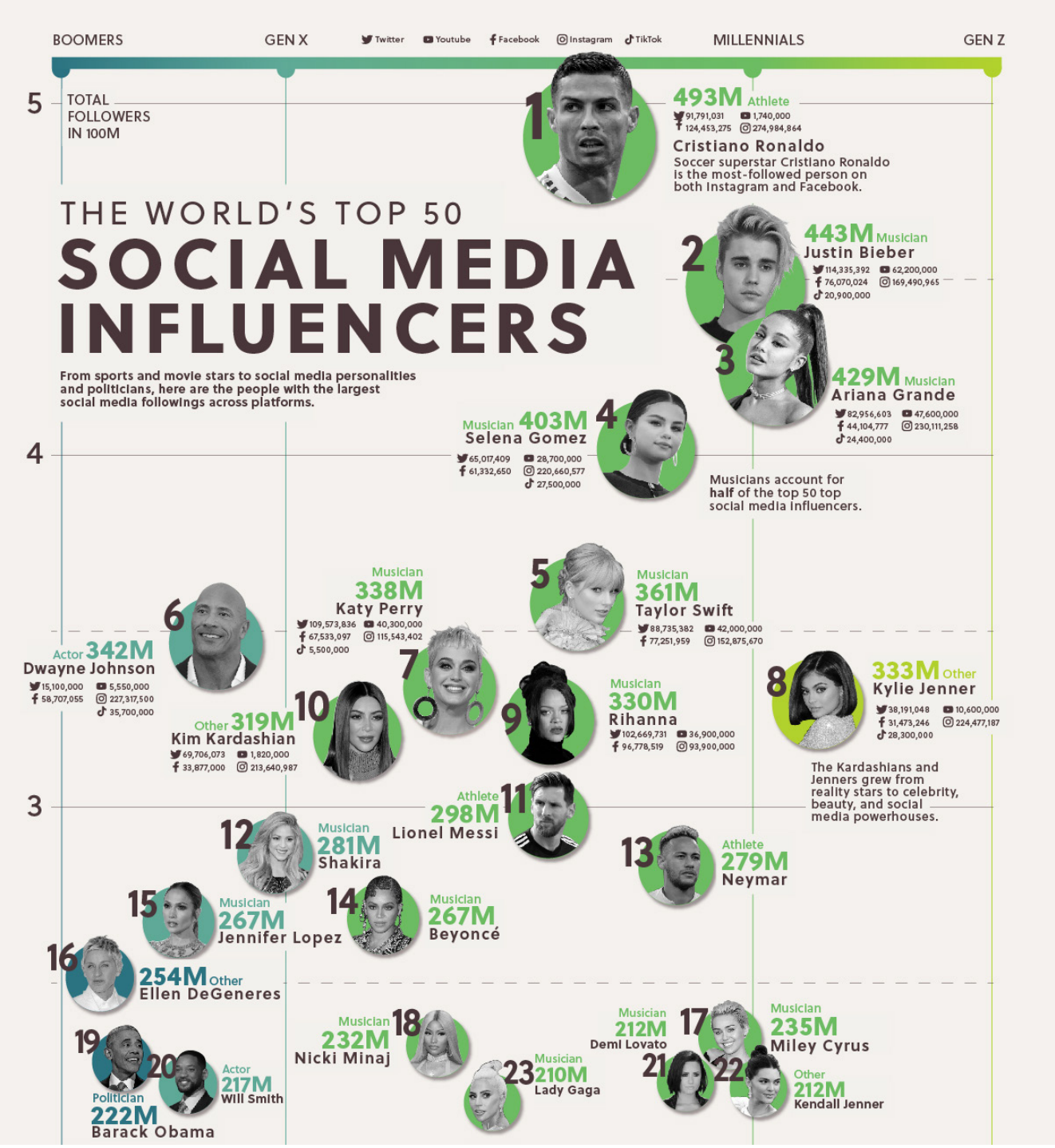
Activity idea #1: Within a graphing and statistics unit, students can access "The World's Top 50 Influencers Across Social Media Platforms" infographic and categorize the data in a variety of ways to draw conclusions about social media influencers. Using this data, the students will select two different categories to sort and compare the information. For instance, students may choose to aggregate the data by social media platforms, influencer genre, or even by generational groups. Instruct students to graphically represent their findings within these two subgroups and then design a Venn diagram that compares and contrasts the statistical results.

Activity idea #2: To gain a better perspective of the impacts of social media influencers, students will be broken into small jigsaw groups for this activity. Students will start by selecting three influencers highlighted in the infographic. While in their small groups, students will conduct additional research on each person's impact via social media. For instance, a student might select Deepika Padukone and use Social Tracker to gather more data about her followers, following and posting statistics. Using this information, students will prepare a short presentation that may include social media platform statistics and the impacts of the influencers. Encourage groups to include graphical representations of their findings and identify significant connections between the statistical data and the identified impacts upon society. Instruct the students to further look for correlations that are evident among the statistical data. After each group presents, elicit comments and reactions from the student audience and engage in a discussion that highlights the effects of the top 50 social media influencers.

Connects to:

- Career pathways:
    - Arts, A/V technology & communications
    - Marketing
    - Science, Technology, Engineering & Mathematics (S.T.E.M.)
- National standards:
    - Comparing and contrasting
    - Determining helpful sources
    - Analyzing data
    - Posing questions
    - Making claims using evidence

Visual/Graphic: Visual Capitalist, [The World's Top 50 Influencers Across Social Media Platforms](#).



Charts and graphs are provided below for settings without internet access. https://www.visualcapitalist.com/worlds-top-50-influencers-across-social-media-platforms/

Correlation of political leaning and the susceptibility to misinformation

Information Overload Helps Fake News Spread, and Social Media Knows It, Scientific American and How Americans Navigated the News in 2020: A Tumultuous Year in Review, Pew Research Center

Activity idea #1: Students will consider whether there is a correlation between peoples' political leaning and their susceptibility to misinformation. Students can consider and discuss whether a person's political stance can be related to their cognitive biases, which is shaped by their personal experiences. Present students with the following task: Use the information in the Scientific American article to explore the correlation between a person's political leaning and the likelihood to share links from low-credibility sources. Use the information in the "Vulnerability to Fake News" graph to identify the patterns shown within this bivariate data. Point out to the students that it's very important to consider the size, color, and locations of the circles. After identifying these pattern observations, facilitate a conversation about their findings. Additionally, the article states that, "the political echo chambers on Twitter are so extreme that individual users' political leanings can be predicted with high accuracy: you have the same opinions as the majority of your connections. This chambered structure efficiently spreads information within a community while insulating that community from other groups." Take time to discuss what this statement means, especially in conjunction with the graphical pattern observations that were identified.

Teacher note: *In advance of this activity, review with students the different types of mathematical correlations including positive, negative, and no correlation.*

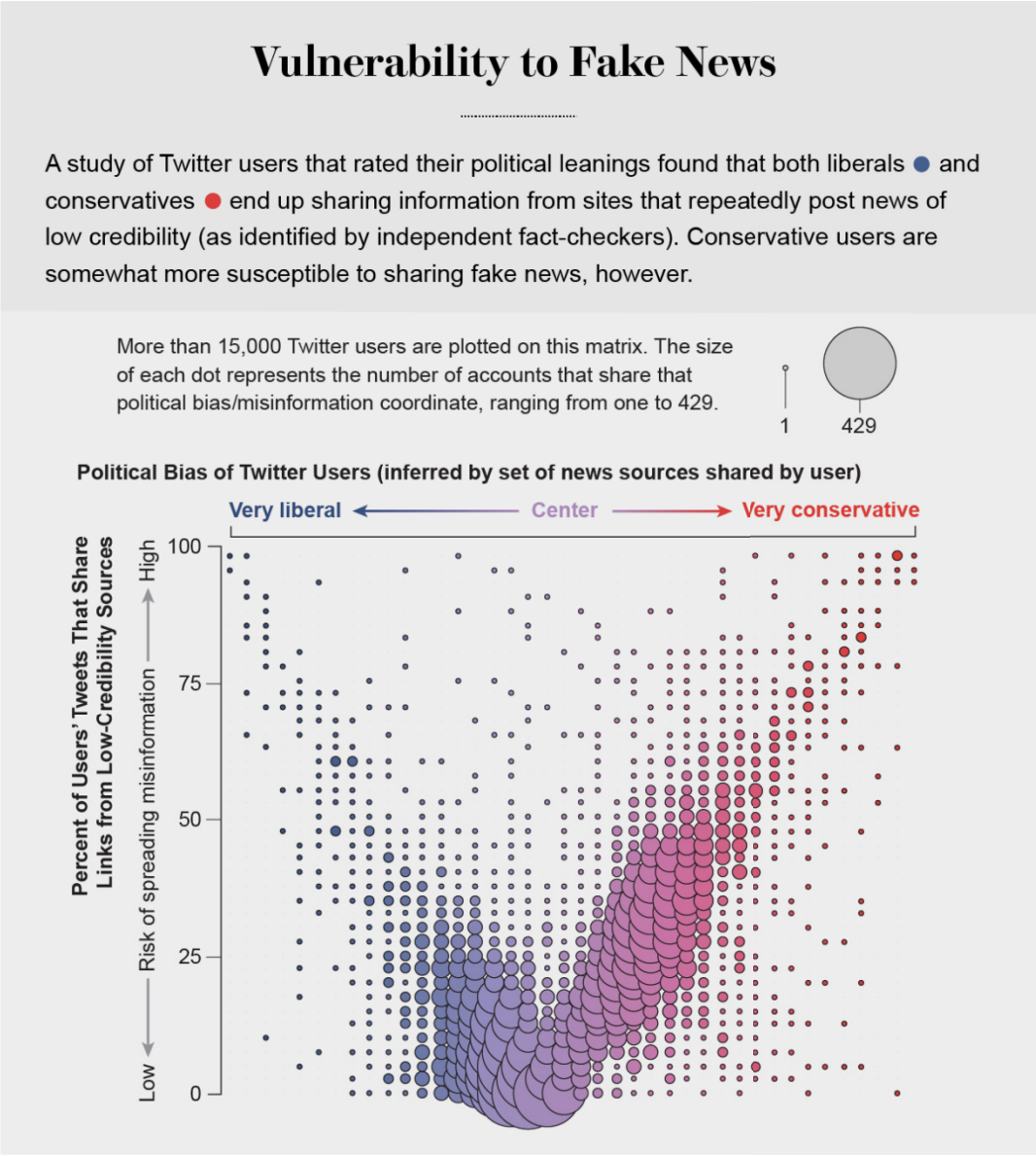
Activity idea #2: Students may choose to work in a small group of 3–4 students. Instruct them to jigsaw read the article "How Americans Navigated the News in 2020: A Tumultuous Year in Review." Each student is responsible for sharing a summary for the section of the article that they read. In addition to summarizing the article, each student will lead a discussion with their small group related to the data table that corresponds to the section of the article they read. Instruct students to give their group a brief overview of the statistical graph or data table, and then facilitate a conversation within their group. Be sure to remind students that it's important to stay focused on the facts and statistics within the article and avoid getting sidetracked with other political conversations. The discussions should center upon the statistical data, not people's personal opinions or speculations.

Connects to:

- Career pathways:
    - Arts, A/V technology & communications
    - Marketing
    - Science, Technology, Engineering & Mathematics (S.T.E.M.)
- National standards:
    - Comparing and contrasting
    - Determining helpful sources
    - Analyzing data

- Posing questions
- Making claims using evidence

Visual/Graphic: Scientific American, Vulnerability to Fake News. Charts and graphs are provided below for settings without internet access.



Credit: Jen Christiansen; Source: Dimitar Nikolov and Filippo Menczer (*data*)

https://www.scientificamerican.com/article/information-overload-helps-fake-news-spread-and-social-media-knows-it/

Collecting data—to solve a problem, you need to find the right information.

Before students begin collecting their own data, instruct them to take some time to interact with the Pew Research Center "Social Media Fact Sheet." Each data table and graph are interactive and incorporate several independent variables. After some time to explore, instruct students to select just one table/graph to further investigate. Encourage them to start identifying any patterns they notice from the data. Also, address any conclusions that can be made about the data based on the visual representation. Students will then develop a related social media question they'd like to explore. Students can create a survey and collect their own data from their family and friends to answer a question or solve a problem related to social media influencers and/or the spread of misinformation. Upon completion of the data collection, instruct students to create a data visualization in the form of a bar graph, line graph, histogram, or scatter plot that they'll then analyze. Lastly, using the data representation, identify three main takeaways that can be learned from the data they collected.

Key vocabulary

cognitive bias: perception of information based upon someone's own personal experiences and bias

disinformation: intentionally created information that is meant to cause confusion and/or harm

engagement bait: social media content designed using deceptive methods to get engagement via likes and shares

fabricated content: made up information created to be deceptive and misleading

false context: putting a piece of content into an incorrect context to change its meaning

imposter content: the use of a well-known celebrity, brand, or logo to mislead people into believing something is authentic content

inverse: opposite in effect

manipulated content: altered information or image(s) from the original state

misinformation: false or out of context information information that is created and spread as fact regardless of the intent to deceive or harm

meme: a term used to reference a link, video, phrase, or other unit of online information

satire: use of humor or exaggeration to critique a person, program, or idea

social media influencer: user of social media with a large audience and deemed as credible