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UNITED STATES DISTRICT COURT  
DISTRICT OF ARIZONA

<p>MESA PUBLIC SCHOOLS,</p> <p style="text-align: center;">Plaintiff,</p> <p style="text-align: center;">v.</p> <p>META PLATFORMS, INC., FACEBOOK HOLDINGS, LLC, FACEBOOK OPERATIONS, LLC, META PAYMENTS INC., META PLATFORMS TECHNOLOGIES, LLC, INSTAGRAM, LLC, SICULUS, INC., SNAP INC., TIKTOK INC., BYTEDANCE INC., ALPHABET INC., GOOGLE LLC, XXVI HOLDINGS INC., and YOUTUBE, LLC,</p> <p style="text-align: center;">Defendants.</p>	<p><b>No.</b></p> <p><b>COMPLAINT</b></p>  <p><b>JURY TRIAL DEMANDED</b></p>
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## I. INTRODUCTION

1. Meta Platforms, Inc., Facebook Holdings, LLC, Facebook Operations, LLC, Meta Payments Inc., Meta Platform Technologies, LLC, Instagram, LLC, Siculus, Inc., Snap Inc., TikTok Inc., ByteDance Inc., Alphabet Inc., Google LLC, XXVI Holdings Inc., and YouTube, LLC (collectively, “**Defendants**”) design, market, promote, and operate social media platforms. Over the past decade, each has grown their respective platforms exponentially, from millions to billions of users. And Defendants have grown not just their user bases, but the frequency with which users use their platforms and the time each user spends on their platforms. Defendants’ growth is a product of choices they made to design and operate their platforms in ways that exploit the psychology and neurophysiology of their users into spending more and more time on their platforms. These techniques are both particularly effective and harmful to the youth audience Defendants have intentionally cultivated, creating a mental health crisis among America’s youth.

2. Defendants have done so for profit. Their business models are based on advertisements. The more time users spend on their platforms, the more ads Defendants can sell.

3. Youths are central to Defendants’ business models. Youths are more likely to have a phone, to use social media, and to have downtime to spend on Defendants’ social media platforms. Plus, youth influence the behavior of their parents and younger siblings. As one Defendant put it, “los[ing] the teen foothold in the U.S.[,]” would mean “los[ing] the pipeline” for growth.<sup>1</sup>

4. Defendants have maximized the time users—particularly youth—spend on their platforms by purposely designing, refining, and operating them to exploit the

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<sup>1</sup> Sheera Frenkel *et al.*, *Instagram Struggles with Fears of Losing Its ‘Pipeline’: Young Users*, N.Y. Times (Oct. 26, 2021), <https://www.nytimes.com/2021/10/16/technology/instagram-teens.html>.

neurophysiology of the brain's reward systems to keep users coming back, coming back frequently, and staying on the respective platforms for as long as possible.

5. Youths are particularly susceptible to Defendants' manipulative conduct because their brains are not fully developed, and they consequently lack the same emotional maturity, impulse control, and psychological resiliency as other more mature users.

6. Defendants have successfully exploited the vulnerable brains of youth, hooking tens of millions of students across the country into positive feedback loops of excessive use and abuse of Defendants' social media platforms. Worse, the content Defendants curate and direct to youth is too often harmful and exploitive (e.g., promoting a "corpse bride" diet, eating 300 calories a day, or encouraging self-harm).

7. Defendants' misconduct has been a substantial factor in causing a youth mental health crisis, which has been marked by higher and higher proportions of youth struggling with anxiety, depression, thoughts of self-harm, and suicidal ideation. The rates at which children have struggled with mental health issues have climbed steadily since 2010 and by 2018 made suicide the second leading cause of death for youths. The pandemic and the corresponding increase in time youth spend on Defendants' platforms has only intensified this crisis.

8. The state of children's mental health led the American Academy of Pediatrics, the American Academy of Child and Adolescent Psychiatry, and the Children's Hospital Association to declare a national emergency, and the U.S. Surgeon General to issue an advisory "to highlight the urgent need to address the nation's youth mental health crisis."<sup>2</sup>

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<sup>2</sup> AAP-AACAP-CHA Declaration of a National Emergency in Child and Adolescent Mental Health, Am. Acad. Pediatrics (Oct. 19, 2021), <https://www.aap.org/en/advocacy/child-and-adolescent-healthy-mental-development/aap-aacap-cha-declaration-of-a-national-emergency-in-child-and-adolescent-mental-health/>; U.S. Surgeon General Issues Advisory on Youth Mental Health Crisis Further Exposed by COVID-19 Pandemic, U.S. Dep't Health & Hum.

9. In his 2022 State of the Union Address, President Joe Biden also called attention to the harm social media has wrought on youth and implored all to “hold social media platforms accountable for the national experiment they’re conducting on our children for profit.”<sup>3</sup>

10. Plaintiff Mesa Public Schools (“**Plaintiff**” or “**MPS**”) brings this action to do just that. Youth in Plaintiff’s community are experiencing the same mental health crisis observed nationally. The East Valley, where Plaintiff is located, has seen drastic increases in suicides. From March to June 2022, at least eight teens died because of suicide or a drug overdose.<sup>4</sup> In 2021, roughly one in five Arizona teenagers had thoughts of suicide.<sup>5</sup> Suicide is now the third leading cause of death of children in Arizona.<sup>6</sup> Many school-aged children in Arizona also suffer from anxiety, depression, and other mental disorders. In response to these stark numbers, the Arizona House of Representatives has formed a special committee on teen mental health,<sup>7</sup> and Governor Katie Hobbs has called for prioritizing the hiring of social workers and counselors for Arizona schools “to

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Servs. (Dec. 7, 2021), <https://www.hhs.gov/about/news/2021/12/07/us-surgeon-general-issues-advisory-on-youth-mental-health-crisis-further-exposed-by-covid-19-pandemic.html>.

<sup>3</sup> President Biden, State of the Union Address (Mar. 1, 2022) (transcript available at <https://www.whitehouse.gov/state-of-the-union-2022/>).

<sup>4</sup> Paul Maryniak, *Mesa Lawmaker Forms House Panel on Teen Crisis*, E. Valley Trib. (June 6, 2022), [https://www.eastvalleytribune.com/news/mesa-lawmaker-forms-house-panel-on-teen-crisis/article\\_bbc82c04-e379-11ec-8dc3-d7d51589b8e4.html](https://www.eastvalleytribune.com/news/mesa-lawmaker-forms-house-panel-on-teen-crisis/article_bbc82c04-e379-11ec-8dc3-d7d51589b8e4.html).

<sup>5</sup> Kim Powell, *Teen Suicide Rates in Arizona Higher than National Average*, KOLD News 13 (Sept. 15, 2021), <https://www.kold.com/2021/09/15/teen-suicide-rates-arizona-higher-than-national-average/>.

<sup>6</sup> Sara Crocker, *Not All Right: Arizona’s Youth Mental Health Emergency*, Phx. Mag. (Dec. 27, 2022), <https://www.phoenixmag.com/2022/12/27/not-all-right-arizonas-youth-mental-health-emergency/>.

<sup>7</sup> Paul Maryniak, *Mesa Lawmaker Forms House Panel on Teen Crisis*, E. Valley Trib. (June 6, 2022), [https://www.eastvalleytribune.com/news/mesa-lawmaker-forms-house-panel-on-teen-crisis/article\\_bbc82c04-e379-11ec-8dc3-d7d51589b8e4.html](https://www.eastvalleytribune.com/news/mesa-lawmaker-forms-house-panel-on-teen-crisis/article_bbc82c04-e379-11ec-8dc3-d7d51589b8e4.html).

address the mental health crisis among children and teens.”<sup>8</sup>

11. Students experiencing anxiety, depression, and other mental health issues perform worse in school, are less likely to attend school, more likely to engage in substance use, and to act out, all of which directly affects Mesa Public Schools’ ability to fulfill its educational mission.

12. That is why Plaintiff, like 96 percent of other schools, provides mental health services to its students. For example, Plaintiff trains its teachers and staff to screen students for mental health symptoms and refer them to services, such as those offered by the school-based health clinics it operates in partnership with behavioral health agencies. But Plaintiff needs a comprehensive, long-term plan and funding to drive a sustained reduction in the record rates of anxiety, depression, suicidal ideation, and other tragic indices of the mental health crisis its youth are experiencing at Defendants’ hands.

## II. JURISDICTION AND VENUE

13. This Court has subject-matter jurisdiction over this case under 28 U.S.C. § 1332(a) because the amount in controversy exceeds \$75,000, and Plaintiff and Defendants are residents and citizens of different states.

14. The Court has personal jurisdiction over Defendants because they do business in the District of Arizona and have sufficient minimum contacts with the District. Defendants intentionally avail themselves of the markets in this State through the promotion, marketing, and operations of their platforms at issue in this lawsuit in Arizona, and by retaining the profits and proceeds from these activities, to render the exercise of jurisdiction by this Court permissible under Arizona law and the United States Constitution.

15. Venue is proper in the District of Arizona pursuant to 28 U.S.C.

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<sup>8</sup> *Transcript: Governor Hobbs 2023 State of the State Address*, Office of the Governor Katie Hobbs (Jan. 9, 2023), <https://azgovernor.gov/office-arizona-governor/news/2023/01/transcript-governor-hobbs-2023-state-state-address>.

§ 1391(b)(2) and (3) because a substantial part of the events or omissions giving rise to the claims at issue in this Complaint arose in this District and Defendants are subject to the Court's personal jurisdiction with respect to this action.

### III. PARTIES

#### A. Plaintiff

16. Plaintiff Mesa Public Schools ("**Plaintiff**" or "**MPS**"), incorporated as Mesa Unified School District #4, is the largest public school district in Arizona, serving approximately 58,000 students in 78 schools. Mesa Public Schools is located in Maricopa County, Arizona, the most populous county in Arizona and the fourth most populous county in the United States.

#### B. Facebook and Instagram Defendants

17. Defendant Meta Platforms, Inc. ("**Meta**"), formerly known as Facebook, Inc., is a Delaware corporation with its principal place of business in Menlo Park, California.

18. Defendant Meta develops and maintains social media platforms, communication platforms, and electronic devices that are widely available to users throughout the United States. The platforms developed and maintained by Meta include Facebook (including its self-titled app, Marketplace, and Workplace), Messenger (including Messenger Kids), Instagram, and a line of electronic virtual reality devices and services called Meta Quest (collectively, "**Meta platforms**").

19. Meta transacts or has transacted business in this District and throughout the United States. At all times material to this Complaint, acting alone or in concert with its subsidiaries (identified below), Meta has advertised, marketed, and distributed the Meta platforms to consumers throughout the United States. At all times material to this Complaint, Meta formulated, directed, controlled, had the authority to control, or participated in the acts and practices set forth in this Complaint.

20. Defendant Meta's subsidiaries include Facebook Holdings, LLC; Facebook



Operations, LLC; Meta Payments Inc.; Meta Platforms Technologies, LLC; Instagram, LLC; and Siculus, Inc.

21. Defendant Facebook Holdings, LLC (“**Facebook Holdings**”) was organized under the laws of the state of Delaware on March 11, 2020, and is a wholly owned subsidiary of Meta Platforms, Inc. Facebook Holdings is primarily a holding company for entities involved in Meta’s supporting and international endeavors, and its principal place of business is in Menlo Park, California. Defendant Meta is the sole member of Facebook Holdings.

22. Defendant Facebook Operations, LLC (“**Facebook Operations**”) was organized under the laws of the state of Delaware on January 8, 2012, and is a wholly owned subsidiary of Meta Platforms, Inc. The principal place of business of Facebook Operations is in Menlo Park, California. Defendant Meta is the sole member of Facebook Operations.

23. Defendant Meta Payments Inc. (“**Meta Payments**”) was incorporated in Florida on December 10, 2010, as Facebook Payments Inc. In July 2022, the entity’s name was amended to Meta Payments Inc. Meta Payments is a wholly owned subsidiary of Meta Platforms, Inc. Meta Payments manages, secures, and processes payments made through Meta, among other activities, and its principal place of business is in Menlo Park, California.

24. Defendant Meta Platforms Technologies, LLC (“**Meta Technologies**”) was organized under the laws of the state of Delaware as “Oculus VR, LLC” on March 21, 2014, and acquired by Meta on March 25, 2014. In November 2018, the entity’s name was amended to Facebook Technologies, LLC. In June 2022, the entity’s name was amended again, this time to Meta Platforms Technologies, LLC. Meta Technologies develops Meta’s virtual and augmented reality technology, such as the Meta Quest line of services, among other technologies related to Meta’s platforms, and its principal place of business is in Menlo Park, California. Defendant Meta is the sole member of Meta

Technologies.

25. Defendant Instagram, LLC (“**Instagram**”) was founded by Kevin Systrom and Mike Krieger in October 2010 and is a social media platform designed for photo and video sharing. In April 2012, Meta purchased the company for approximately \$1 billion. Meta reformed the limited liability company under the laws of the state of Delaware on April 7, 2012, and the company’s principal place of business is in Menlo Park, California. Defendant Meta is the sole member of Instagram.

26. Defendant Siculus, Inc. (“**Siculus**”) was incorporated in Delaware on October 19, 2011. Siculus is a wholly owned subsidiary of Meta, which supports Meta platforms by constructing data facilities and other projects. Siculus’s principal place of business is in Menlo Park, California.

**C. Snap Defendant**

27. Defendant Snap Inc. (“**Snap**”) is a Delaware corporation with its principal place of business in Santa Monica, California. Snap transacts or has transacted business in this District and throughout the United States. At all times material to this Complaint, acting alone or in concert with others, Snap has advertised, marketed, and distributed the Snapchat social media platform to consumers throughout the United States. At all times material to this Complaint, Snap formulated, directed, controlled, had the authority to control, or participated in the acts and practices set forth in this Complaint.

**D. TikTok Defendants**

28. Defendant TikTok Inc. was incorporated in California on April 30, 2015, with its principal place of business in Culver City, California. TikTok Inc. transacts or has transacted business in this District and throughout the United States. At all times material to this Complaint, acting alone or in concert with others, TikTok Inc. has advertised, marketed, and distributed the TikTok social media platform to consumers throughout the United States. At all times material to this Complaint, acting alone or in concert with ByteDance Inc., TikTok Inc. formulated, directed, controlled, had the

authority to control, or participated in the acts and practices set forth in this Complaint.

29. Defendant ByteDance Inc. (“**ByteDance**”) is a Delaware corporation with its principal place of business in Mountain View, California. ByteDance transacts or has transacted business in this District and throughout the United States. At all times material to this Complaint, acting alone or in concert with others, ByteDance has advertised, marketed, and distributed the TikTok social media platform to consumers throughout the United States. At all times material to this Complaint, acting alone or in concert with TikTok Inc., ByteDance formulated, directed, controlled, had the authority to control, or participated in the acts and practices set forth in this Complaint.

**E. YouTube Defendants**

30. Defendant Alphabet Inc. is a Delaware corporation with its principal place of business in Mountain View, California. Alphabet Inc. is the sole stockholder of XXVI Holdings Inc.

31. Defendant XXVI Holdings Inc. is a Delaware corporation with its principal place of business in Mountain View, California. XXVI Holdings, Inc. is a wholly owned subsidiary of Alphabet Inc. and the managing member of Google LLC (“**Google**”).

32. Defendant Google is a limited liability company organized under the laws of the state of Delaware, and its principal place of business is in Mountain View, California. Google LLC is a wholly owned subsidiary of XXVI Holdings Inc., and the managing member of YouTube, LLC. Google LLC transacts or has transacted business in this District and throughout the United States. At all times material to this Complaint, acting alone or in concert with others, Google LLC has advertised, marketed, and distributed its YouTube video sharing platform to consumers throughout the United States. At all times material to this Complaint, acting alone or in concert with YouTube, LLC, Google LLC formulated, directed, controlled, had the authority to control, or participated in the acts and practices set forth in this Complaint.

33. Defendant YouTube, LLC is a limited liability company organized under

the laws of the state of Delaware, and its principal place of business is in San Bruno, California. YouTube, LLC is a wholly owned subsidiary of Google LLC. YouTube, LLC transacts or has transacted business in this District and throughout the United States. At all times material to this Complaint, acting alone or in concert with Defendant Google LLC, YouTube, LLC has advertised, marketed, and distributed its YouTube social media platform to consumers throughout the United States. At all times material to this Complaint, acting alone or in concert with Google LLC, YouTube, LLC formulated, directed, controlled, had the authority to control, or participated in the acts and practices set forth in this Complaint.

#### IV. FACTUAL ALLEGATIONS

##### A. Millions of Youth Have Become Excessive and Problematic Users of Social Media

34. Researchers studying the effect social media<sup>9</sup> has on the brain have shown that social media exploits “the same neural circuitry” as “gambling and recreational drugs to keep consumers using their products as much as possible.”<sup>10</sup>

35. As described below, each Defendant designed and marketed their exploitive social media platform to be extremely popular with youth. And they have been successful. Ninety percent of children ages 13–17 use social media.<sup>11</sup> Younger children also regularly use social media. One study reported 38 percent of children ages 8–12 used

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<sup>9</sup> The term “social media” is commonly used to refer to text, photos, videos, and ideas that are exchanged among virtual communities. The interactive technologies that allow for the virtual exchange of these media among networks of users are known as social media platforms.

<sup>10</sup> *Social Media Addiction*, Addiction Ctr, <https://www.addictioncenter.com/drugs/social-media-addiction/#:~:text=Due%20to%20the%20effect%20that,when%20taking%20an%20addictive%20substance> (last visited Dec. 8, 2022).

<sup>11</sup> *Social Media and Teens*, Am. Acad. Child & Adolescent Psychiatry (Mar. 2018), [https://www.aacap.org/AACAP/Families\\_and\\_Youth/Facts\\_for\\_Families/FFF-Guide/Social-Media-and-Teens-100.aspx](https://www.aacap.org/AACAP/Families_and_Youth/Facts_for_Families/FFF-Guide/Social-Media-and-Teens-100.aspx).

social media in 2021.<sup>12</sup> Other studies reveal numbers as high as 49 percent of children ages 10–12 use social media and 32 percent of children ages 7–9 use social media.<sup>13</sup>

36. The most popular of these platforms is YouTube. A vast majority, 95 percent, of children ages 13-17 have used YouTube.<sup>14</sup>

37. TikTok has skyrocketed in popularity with teenagers since its merger with Musical.ly in 2018. As of July 2020, “TikTok classified more than a third of its 49 million *daily* users in the United States as being 14 years old or younger[,]” and that likely underestimates those under 14 and older teenagers (i.e., those between 15 and 18 years old) because TikTok claims not to know how old a third of its daily users are.<sup>15</sup> TikTok is now the second most popular social media platform with over 67 percent of children ages 13–17 having used the app.<sup>16</sup>

38. Instagram’s numbers are comparable to TikTok, with 62 percent of children ages 13–17 reporting they have used the app.<sup>17</sup>

39. Snapchat also remains popular with youth, with 59 percent of children ages 13–17 reporting they have used the app.<sup>18</sup>

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<sup>12</sup> Victoria Rideout et al., *The Common Sense Census: Media Use by Tweens and Teens, 2021* at 5, Common Sense Media (2022),

[https://www.common sense media.org/sites/default/files/research/report/8-18-census-integrated-report-final-web\\_0.pdf](https://www.common sense media.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf).

<sup>13</sup> *Sharing Too Soon? Children and Social Media Apps*, C.S. Mott Child.’s Hosp. Univ. Mich. Health (Oct. 18, 2021),

[https://mottpoll.org/sites/default/files/documents/101821\\_SocialMedia.pdf](https://mottpoll.org/sites/default/files/documents/101821_SocialMedia.pdf).

<sup>14</sup> Emily Vogels et al., *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>.

<sup>15</sup> Raymond Zhong & Sheera Frenkel, *A Third of TikTok’s U.S. Users May Be 14 or Under, Raising Safety Questions*, N.Y. Times (Sept. 17, 2020),

<https://www.nytimes.com/2020/08/14/technology/tiktok-underage-users-rtc.html>.

<sup>16</sup> Emily Vogels et al., *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>.

<sup>17</sup> *Id.*

<sup>18</sup> *Id.*

40. Facebook rounds out the five most popular social media platforms, with 32 percent of children ages 13–17 reporting they have used Facebook’s app or website.<sup>19</sup>

41. Teenagers who use these social media platforms are also likely to use them every day. One study estimates that 62 percent of children ages 13–18 use social media every day.<sup>20</sup> An increasing number of younger children also use social media daily with 18 percent of children ages 8–12 reporting using a social media site at least once a day.<sup>21</sup>

42. Daily use for many teenagers does not consist of logging onto a platform just once. Rather, many teenage users check social media repeatedly throughout the day. In one study, teenage users reported checking Snapchat thirty times a day on average.<sup>22</sup>

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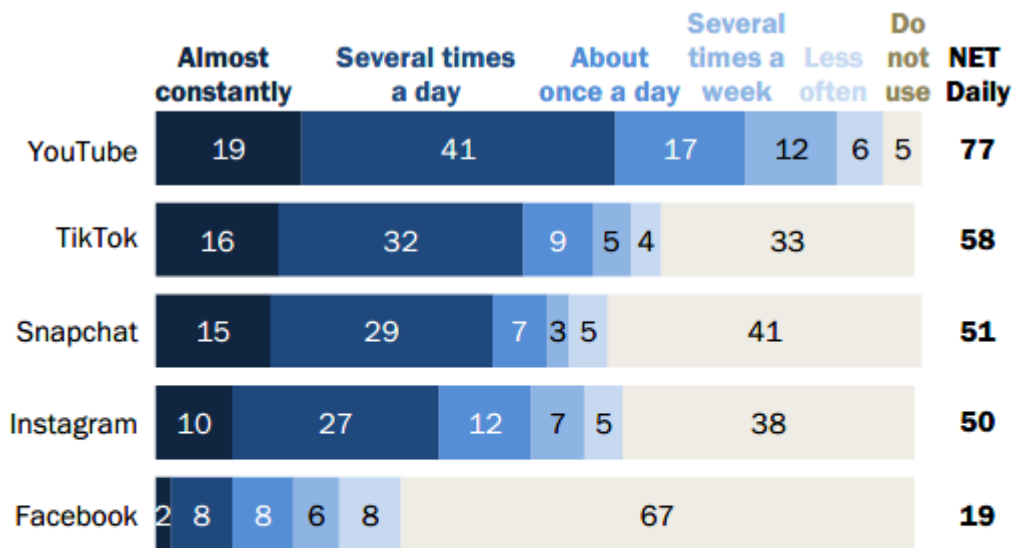
<sup>19</sup> *Id.*

<sup>20</sup> Victoria Rideout *et al.*, *The Common Sense Census: Media Use by Tweens and Teens, 2021* at 4, Common Sense Media (2022), [https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web\\_0.pdf](https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf).

<sup>21</sup> *Id.* at 5.

<sup>22</sup> Erinn Murphy *et al.*, *Taking Stock with Teens, Fall 2021* at 13, Piper Sandler (2021), [tinyurl.com/89ct4p88](https://tinyurl.com/89ct4p88).

43. Even more alarming, some teenagers never stop looking at social media.<sup>23</sup>



Note: Teens refer to those ages 13 to 17. Those who did not give an answer are not shown. Figures may not add up to the NET values due to rounding. Source: Survey conducted April 14-May 4, 2022. "Teens, Social Media and Technology 2022"

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44. Nearly 20 percent of teens use YouTube almost constantly.<sup>24</sup> TikTok and Snapchat are close behind, with near constant use rates among teens at 16 percent and 15 percent respectively.<sup>25</sup> Meanwhile, 10 percent of teens use Instagram almost constantly.<sup>26</sup> And two percent of teens report using Facebook almost constantly.<sup>27</sup>

45. Teenagers are aware of the grip social media has on their lives yet still cannot stop using it. Thirty-six percent of teenagers admit they spend too much time on social media.<sup>28</sup> And over half of teens say that giving up social media would be

<sup>23</sup> Emily Vogels *et al.*, *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>.

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

somewhat hard, with nearly one-in-five teens saying giving up social media would be very hard.<sup>29</sup> And of the subgroup of teenagers who use at least one platform “almost constantly,” 71 percent said giving up social media would be hard, with 32 percent saying giving up social media would be very hard.<sup>30</sup>

46. The more that teenagers use social media, the harder they find it to give up. Teenagers who say they spend too much time on social media are almost twice as likely to say that giving up social media would be hard as teens who see their social media usage as about right.<sup>31</sup>

47. Another study shows that among teenagers who regularly use social media, 32 percent “wouldn’t want to live without” YouTube.<sup>32</sup> Twenty percent of teenagers said the same about Snapchat; 13 percent said the same about both TikTok and Instagram; and 6 percent said the same about Facebook.<sup>33</sup>

48. Despite using social media frequently, most youth do not enjoy it. Only 27 percent of boys and 42 percent of girls ages 8–18 reported enjoying social media “a lot” in 2021.<sup>34</sup>

## **B. Research Has Confirmed the Harmful Effects of Social Media on Youth**

49. Social media use—especially excessive use—has severe and wide-ranging effects on youth mental health. Social media use is linked to increases in mental, emotional, developmental, and behavior disorders. Independent research and internal data from these social media platforms show social media has a direct negative impact on teenagers’ mental health on various fronts.

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<sup>29</sup> *Id.*

<sup>30</sup> *Id.*

<sup>31</sup> *Id.*

<sup>32</sup> Victoria Rideout *et al.*, *Common Sense Census: Media use by tweens and teens, 2021* at 31, Common Sense Media (2022), [https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web\\_0.pdf](https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf).

<sup>33</sup> *Id.*

<sup>34</sup> *Id.* at 34.



50. In general, electronic screen use causes lower psychological well-being.<sup>35</sup> This link is especially apparent among adolescents. Those with high screen time are twice as likely to receive diagnoses of depression, anxiety, or need treatment for mental or behavior health conditions compared to low screen time users.<sup>36</sup>

51. Social media specifically has a “detrimental effect on the psychological health of its users.”<sup>37</sup> One systematic review of 16 studies on the effects of social media on mental health found social media use increases levels of anxiety and depression.<sup>38</sup>

52. Social media also has detrimental effects on the mental health of adolescents specifically. Increased social media use increases depressive symptoms, suicide-related outcomes, and suicide rates among adolescents.<sup>39</sup>

53. One of the primary reasons the use of social media is associated with depressive symptoms among adolescents is because it encourages unhealthy social comparison and feedback seeking behaviors.<sup>40</sup> Because adolescents spend a majority of

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<sup>35</sup> Jean M. Twenge & W. Keith Campbell, *Associations between screen time and lower psychological well-being among children and adolescents: Evidence from a population-based study*, 12 *Prev. Med. Rep.* 271–83 (2018), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6214874/>; Ariel Shensa *et al.*, *Social Media Use and Depression and Anxiety Symptoms: A Cluster Analysis*, 42(2) *Am. J. Health Behav.* 116–28 (2018), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5904786/>.

<sup>36</sup> Jean M. Twenge & W. Keith Campbell, *Associations between screen time and lower psychological well-being among children and adolescents: Evidence from a population-based study*, 12 *Prev. Med. Rep.* 271–83 (2018), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6214874/>.

<sup>37</sup> Fazida Karim *et al.*, *Social Media Use and Its Connection to Mental Health: A Systemic Review*, *Cureus* Volume 12(6) (June 15, 2020), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7364393/>.

<sup>38</sup> *Id.*

<sup>39</sup> Jean M. Twenge *et al.*, *Increases in Depressive Symptoms, Suicide-Related Outcomes, and Suicide Rates Among U.S. Adolescents After 2010 and Links to Increased New Media Screen Time*, 6 *Clinical Psych. Sci.* 3–17 (2017), <https://doi.org/10.1177/2167702617723376>.

<sup>40</sup> Jacqueline Nesi & Mitchell J Prinstein, *Using Social Media for Social Comparison and Feedback-Seeking: Gender and Popularity Moderate Associations with Depressive*

their time on social media looking at other users' profiles and photos, they are likely to engage in negative comparisons with their peers.<sup>41</sup> Specifically, adolescents are likely to engage in harmful upward comparisons with others they perceive to be more popular.<sup>42</sup>

54. Clinicians have also observed a clear relationship between youth social media use and disordered eating behavior.<sup>43</sup> The more social media accounts an adolescent has, the greater disordered eating behaviors they exhibit. Additionally, research shows the more time young girls spend on social media platforms, such as Instagram and Snapchat, the more likely they are to develop disordered eating behaviors.<sup>44</sup>

55. Social media use has also caused an increase in cyberbullying. The more time an individual, especially males, spend on social media, the more likely they are to commit acts of cyberbullying.<sup>45</sup> Cyberbullying is now so common that most American teens, 59 percent, have experienced some form of cyberbullying.<sup>46</sup> This number includes

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*Symptoms*, 43 J. Abnormal Child Psych. 1427–38 (2015),  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5985443/>.

<sup>41</sup> *Id.*; see also Nino Gugushvili *et al.*, *Facebook use intensity and depressive symptoms: a moderated mediation model of problematic Facebook use, age, neuroticism, and extraversion* at 3, BMC Psych. 10, 279 (2022), <https://doi.org/10.1186/s40359-022-00990-7> (explaining that youth are particularly vulnerable because they “use social networking sites for construing their identity, developing a sense of belonging, and for comparison with others”).

<sup>42</sup> *Id.*

<sup>43</sup> Simon M. Wilksch *et al.*, *The relationship between social media use and disordered eating in young adolescents*, 53 Int'l J. Eating Disorders 96–106 (2020), <https://pubmed.ncbi.nlm.nih.gov/31797420/>.

<sup>44</sup> *Id.*

<sup>45</sup> Amanda Giordano *et al.*, *Understanding Adolescent Cyberbullies: Exploring Social Media Addiction and Psychological Factors*, 7(1) J. Child & Adolescent Counseling 42–55 (2021), <https://www.tandfonline.com/doi/abs/10.1080/23727810.2020.1835420?journalCode=cac20>.

<sup>46</sup> Monica Anderson, *A Majority of Teens Have Experienced Some Form of Cyberbullying*, Pew Rsch. Ctr. (Sept. 27, 2018), <https://www.pewresearch.org/internet/2018/09/27/a-majority-of-teens-have-experienced-some-form-of-cyberbullying/>.

42 percent of teens experiencing name calling; 32 percent being subject to false rumors; 25 percent receiving an unsolicited explicit image; 21 percent being subject to online stalking; 16 percent receiving physical threats online; and 7 percent having had explicit images of them shared without their consent.<sup>47</sup>

56. Social media use also contributes to sleep deprivation. Young adults who spend a lot of time on social media during the day or check it frequently throughout the week are more likely to suffer sleep disturbances than their peers who use social media infrequently.<sup>48</sup> In turn, disturbed and insufficient sleep is associated with poor health outcomes.<sup>49</sup>

57. Defendants exacerbate the disruption of sleep by sending push notifications and emails either at night when children should be sleeping or during school hours when they should be studying, thereby prompting children to re-engage with Defendants' platforms at times when using them is harmful to their health and well-being.<sup>50</sup>

58. Further, children are especially vulnerable to developing harmful behaviors because their prefrontal cortex is not fully developed.<sup>51</sup> Consequently, they find it particularly difficult to exercise the self-control required to regulate their own use of Defendants' platforms. In this regard, self-regulation allows people to delay gratification, postponing an immediate reward for a better reward later. Adolescents' low capacity for

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<sup>47</sup> *Id.*

<sup>48</sup> Jessica C. Levenson *et al.*, *The Association Between Social Media Use and Sleep Disturbance Among Young Adults*, 85 *Preventive Med.* 36–41 (Apr. 2016), <https://www.sciencedirect.com/science/article/abs/pii/S0091743516000025>.

<sup>49</sup> *Id.*

<sup>50</sup> *See, e.g.*, Beatrice Nolan, *Kids are waking up in the night to check their notifications and are losing about 1 night's worth of sleep a week, study suggests*, *Bus. Insider* (Sept. 19, 2022), <https://www.businessinsider.com/social-media-costing-children-one-night-sleep-study-2022-9> (approximately 12.5% of children report waking up to check social media notifications).

<sup>51</sup> Nino Gugushvili *et al.*, *Facebook use intensity and depressive symptoms: a moderated mediation model of problematic Facebook use, age, neuroticism, and extraversion* at 3, *BMC Psych.* 10, 279 (2022), <https://doi.org/10.1186/s40359-022-00990-7>.

self-regulation means they are particularly vulnerable to the immediately pleasurable, but ultimately harmful, effects of the repeated dopamine spikes caused by an external stimulus, such as “likes” that activate the reward system in the brain.<sup>52</sup>

59. As discussed in further detail *infra* Section IV.D., these reward-based learning systems “contribute to the maintenance of excessive usage patterns.”<sup>53</sup> Researchers investigating the “directionality between social networking [platforms] and problematic use,” have found that “increases in the intensity of use . . . predict[] problematic use.”<sup>54</sup> And empirical studies have found that problematic use is associated with “insomnia, stress, relationship dissatisfaction, anxiety, social anxiety, and depressive symptoms.”<sup>55</sup>

60. In this regard, adolescents are especially vulnerable to long-term harm from Defendants’ platforms because excessive and problematic use can disrupt their brains’ development at a critical stage.

### **C. As a Result, America’s Youth are Facing a Mental Health Crisis**

61. The number of youths using Defendants’ social media platforms and the intensity of their use has increased significantly since 2008, which has contributed to a wide range of negative effects on youth mental health. Over that same time the number of youths experiencing depression, contemplating suicide, seeking emergency room help for mental health issues and—tragically—committing suicide has skyrocketed.

62. Today, one in five children ages 3–17 in the United States have a mental, emotional, developmental, or behavioral disorder.<sup>56</sup>

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<sup>52</sup> *Id.*

<sup>53</sup> *Id.*

<sup>54</sup> *Id.*

<sup>55</sup> *Id.* (collecting sources).

<sup>56</sup> *U.S. Surgeon General Issues Advisory on Youth Mental Health Crisis Further Exposed by COVID-19 Pandemic*, U.S. Dep’t Health & Hum. Servs. (Dec. 7, 2021), <https://www.hhs.gov/about/news/2021/12/07/us-surgeon-general-issues-advisory-on-youth-mental-health-crisis-further-exposed-by-covid-19-pandemic.html>.

63. On December 7, 2021, these issues led the United States Surgeon General to issue an advisory on youth the mental health crisis.<sup>57</sup> In issuing the advisory, the Surgeon General noted, “[m]ental health challenges in children, adolescents, and young adults are real and widespread. Even before the pandemic, an alarming number of young people struggled with feelings of helplessness, depression, and thoughts of suicide — and rates have increased over the past decade.”<sup>58</sup>

64. While the report highlights ways in which the COVID-19 pandemic has exacerbated mental health issues for American youth, it also highlights the mental health challenges youth faced before the pandemic. Specifically, the report notes that before the pandemic, “mental health challenges were the leading cause of disability and poor life outcomes in young people.”<sup>59</sup>

65. Before the pandemic, one-in-five children ages 3–17 in the United States had a mental, emotional, developmental, or behavior disorder.<sup>60</sup>

66. From 2009–19, the rate of high school students who reported persistent feelings of sadness or hopelessness increased by 40 percent (to one out of every three kids).<sup>61</sup> The share of kids seriously considering attempting suicide increased by 36 percent and the share creating a suicide plan increased by 44 percent.<sup>62</sup>

67. From 2007 to 2019, suicide rates among youth ages 10–24 in the United

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<sup>57</sup> *Protecting Youth Mental Health: The U.S. Surgeon General’s Advisory*, U.S. Dep’t Health & Hum. Servs. (Dec. 7, 2021), <https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf>.

<sup>58</sup> *U.S. Surgeon General Issues Advisory on Youth Mental Health Crisis Further Exposed by COVID-19 Pandemic*, U.S. Dep’t Health & Hum. Servs. (Dec. 7, 2021), <https://www.hhs.gov/about/news/2021/12/07/us-surgeon-general-issues-advisory-on-youth-mental-health-crisis-further-exposed-by-covid-19-pandemic.html>.

<sup>59</sup> *Id.*

<sup>60</sup> *Id.*

<sup>61</sup> *Protecting Youth Mental Health: The U.S. Surgeon General’s Advisory* at 8, U.S. Dep’t Health & Hum. Servs. (Dec. 7, 2021), <https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf>.

<sup>62</sup> *Id.*

States increased by 57 percent.<sup>63</sup> By 2018, suicide was the second leading cause of death for youth ages 10–24.<sup>64</sup>

68. From 2007 to 2016, emergency room visits for youth ages 5–17 rose 117 percent for anxiety disorders, 44 percent for mood disorders, and 40 percent for attention disorders.<sup>65</sup>

69. This and other data led the American Academy of Pediatrics, the American Academy of Child and Adolescent Psychiatry, and the Children’s Hospital Association to join the Surgeon General and declare a national emergency in child and adolescent mental health.<sup>66</sup>

70. President Biden also addressed the mental health harms Defendants’ platforms have caused youth in his state of the union address this year.<sup>67</sup> There he noted that children were struggling from the harms of social media—even before the pandemic—and called on all to “hold social media platforms accountable for the national experiment they’re conducting on our children for profit.”<sup>68</sup>

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<sup>63</sup> *Id.*

<sup>64</sup> *AAP-AACAP-CHA Declaration of a National Emergency in Child and Adolescent Mental Health*, Am. Acad. Pediatrics (Oct. 19, 2021), <https://www.aap.org/en/advocacy/child-and-adolescent-healthy-mental-development/aap-aacap-cha-declaration-of-a-national-emergency-in-child-and-adolescent-mental-health/>.

<sup>65</sup> Matt Richtel, *A Teen’s Journey Into the Internet’s Darkness and Back Again*, N.Y. Times (Aug. 22, 2022), <https://www.nytimes.com/2022/08/22/health/adolescents-mental-health-technology.html>.

<sup>66</sup> *AAP-AACAP-CHA Declaration of a National Emergency in Child and Adolescent Mental Health*, Am. Acad. Pediatrics (Oct. 19, 2021), <https://www.aap.org/en/advocacy/child-and-adolescent-healthy-mental-development/aap-aacap-cha-declaration-of-a-national-emergency-in-child-and-adolescent-mental-health/>.

<sup>67</sup> President Biden, State of the Union Address (Mar. 1, 2022) (transcript available at <https://www.whitehouse.gov/state-of-the-union-2022/>).

<sup>68</sup> *Id.*

**D. Defendants Intentionally Market to, Design, and Operate Their Social Media Platforms for Youth Users**

71. This mental health crisis is no accident. It is the result of the Defendants' deliberate choices and affirmative actions to design and market their social media platforms to attract youth.

72. Defendants each run and operate social media platforms. The interactive features Defendants provide on their platforms are similar in many respects. For example, Facebook, Instagram, Snap, TikTok, and YouTube all offer tailored "feeds" of content curated by complex algorithms intended to learn your interests; ways to publicly express affirmation for such curated content through "likes," comments, and sharing or reposting the content; and, in fact, each is known to copy the designs and features of one another.<sup>69</sup> The salient features of Defendants' social media platforms are described in more detail below.

73. Defendants' make money from their social media platforms by using them as advertising platforms. Defendants collect data on their users' viewing habits and behaviors and use that data to sell advertisers access to their youth and other users to allow those companies to promote their products. Advertisers pay a premium to target advertisements to specific categories of users, including youth.

74. Defendants view youth, adolescent, and even pre-adolescent users as one of their most valuable commodities as an audience for their advertisements. Young users are central to Defendants' business model and advertising revenue as children are more likely than adults to use social media. Indeed, 95 percent of children ages 13–17 have

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<sup>69</sup> See, e.g., Kevin Hurler, *For Sites Like Instagram and Twitter, Imitation Is the Only Form of Flattery*, Gizmodo (Aug. 16, 2022), <https://gizmodo.com/instagram-tiktok-snapchat-facebook-meta-1849395419>.

cellphones,<sup>70</sup> 90 percent use social media,<sup>71</sup> and 28 percent buy products and services through social media.<sup>72</sup>

75. To profit from these young users, Defendants intentionally market their platforms to youths and adolescents. For children under 13, the Children’s Online Privacy Protection Act (“COPPA”)<sup>73</sup> regulates the conditions under which platforms, like Defendants’, can collect and use their information.

76. COPPA requires platforms that either target children under age 13 or have actual knowledge of users under age 13 to obtain “verifiable parental consent” prior to collecting and using information about children under age 13.<sup>74</sup> Defendants have blatantly violated COPPA or turned a blind eye to younger users on their platforms by leaving users to self-report their age. More recently, Defendants embarked on a bolder strategy and sought to capture pre-adolescent audiences by offering “kid versions” of their platforms that, while not collecting and using their information, are reportedly “designed to fuel [kids’] interest in the grown-up version.”<sup>75</sup>

77. To maximize revenue, Defendants have intentionally designed and operated their platforms to maximize users’ screen time. Defendants have done so by building features and operating their platforms in a manner intended to exploit human psychology using complex algorithms driven by advanced artificial intelligence and machine-learning systems. In this regard, Defendants have progressively modified their platforms in ways

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<sup>70</sup> Emily Vogels *et al.*, *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>.

<sup>71</sup> *Social Media and Teens*, Am. Acad. Child & Adolescent Psychiatry (Mar. 2018), [https://www.aacap.org/AACAP/Families\\_and\\_Youth/Facts\\_for\\_Families/FFF-Guide/Social-Media-and-Teens-100.aspx](https://www.aacap.org/AACAP/Families_and_Youth/Facts_for_Families/FFF-Guide/Social-Media-and-Teens-100.aspx).

<sup>72</sup> Erin Murphy *et al.*, *Taking Stock with Teens, Fall 2021* at 13, Piper Sandler (2021), [tinyurl.com/89ct4p88](https://www.pipersandler.com/89ct4p88).

<sup>73</sup> See 15 U.S.C. §§ 6501-6506.

<sup>74</sup> *Id.*

<sup>75</sup> Leonard Sax, *Is TikTok Dangerous for Teens?*, Inst. Fam. Stud. (Mar. 29, 2022), <https://ifstudies.org/blog/is-tiktok-dangerous-for-teens->



that promote excessive and problematic use and have done so in ways known to be harmful to children.

78. One way Defendants maximize the time users spend on their platforms involves the design of feeds—whether of photos, videos, or sponsored or promoted content. Each uses algorithms to serve users personalized content for them to consume ad nauseum. Google’s former design ethicist, Tristan Harris, explained that this never-ending stream is designed to “keep [users] scrolling, and purposely eliminate any reason for [them] to pause, reconsider or leave.”<sup>76</sup> Defendants’ feeds take “an experience that was bounded and finite, and turn it into a bottomless flow that keeps going.”<sup>77</sup> This “flow state,” as psychologists describe it, “fully immerse[s]” users, distorts their perception of time, and “has been shown to be associated with problematic use of social networking sites.”<sup>78</sup>

79. A second way social media platforms manipulate users is through social reciprocity. “Reciprocity,” from a psychology perspective, refers to the powerful social phenomenon of how people respond to positive or, conversely, hostile actions. Reciprocity means that in response to friendly actions, people respond in a friendly manner and vice versa.<sup>79</sup> Phillip Kunz best illustrated the automatic nature of reciprocity through his Christmas card experiment. In the experiment, Mr. Kunz sent a group of

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<sup>76</sup> Von Tristan Harris, *The Slot Machine in Your Pocket*, Spiegel Int’l (July 27, 2016), <https://www.spiegel.de/international/zeitgeist/smartphone-addiction-is-part-of-the-design-a-1104237.html>.

<sup>77</sup> *Id.*

<sup>78</sup> Gino Gugushvili *et al.*, *Facebook use intensity and depressive symptoms: a moderated mediation model of problematic Facebook use, age, neuroticism, and extraversion* at 3, BMC Psych. 10, 279 (2022), <https://doi.org/10.1186/s40359-022-00990-7>.

<sup>79</sup> Ernst Fehr & Simon Gächter, *Fairness and Retaliation: The Economics of Reciprocity*, 14(3) J. Econ. Persps. 159–81 (2000), [https://www.researchgate.net/profile/Ernst-Fehr-2/publication/23756527\\_Fairness\\_and\\_Retaliation\\_The\\_Economics\\_of\\_Reciprocity/links/5eb024e945851592d6b87d3b/Fairness-and-Retaliation-The-Economics-of-Reciprocity.pdf](https://www.researchgate.net/profile/Ernst-Fehr-2/publication/23756527_Fairness_and_Retaliation_The_Economics_of_Reciprocity/links/5eb024e945851592d6b87d3b/Fairness-and-Retaliation-The-Economics-of-Reciprocity.pdf).

complete strangers holiday cards with pictures of his family and included a brief note.<sup>80</sup> Those people, whom he had never met or communicated with before, reciprocated, flooding him with holiday cards.<sup>81</sup> The majority of the responses did not even ask Mr. Kunz who he was.<sup>82</sup> They simply responded to his initial gesture with a reciprocal action.

80. Reciprocity is why Facebook and Snapchat automatically tell a “sender when you ‘saw’ their message, instead of letting you avoid disclosing whether you read it. As a consequence, you feel more obligated to respond[,]” immediately.<sup>83</sup> That keeps users on the platform or, through push notifications—another insidious tool—users feel psychologically compelled to return to the platform.

81. A third way Defendants manipulate users to keep using or coming back to their platforms is through the use of intermittent variable rewards (“IVR”). Slot machines are a frequent example of how IVR works.<sup>84</sup> Users pull a lever to win a prize. With each pull, the user may or may not win a prize (i.e., an intermittent reward that varies in value).

82. IVR works by spacing out dopamine triggering stimuli with dopamine gaps—allowing for anticipation and craving to develop, which strengthens the desire to engage in the activity with each release of dopamine.

83. Defendants bake IVR into the design and operations of their respective

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<sup>80</sup> Phillip R. Kunz & Michael Woolcott, *Season’s Greetings: From my status to yours*, 5(3) Soc. Sci. Rsch. 269–78 (Sept. 1976), [https://doi.org/10.1016/0049-089X\(76\)90003-X](https://doi.org/10.1016/0049-089X(76)90003-X).

<sup>81</sup> *Id.*

<sup>82</sup> *Id.*

<sup>83</sup> Von Tristan Harris, *The Slot Machine in Your Pocket*, Spiegel Int’l (July 27, 2016), <https://www.spiegel.de/international/zeitgeist/smartphone-addiction-is-part-of-the-design-a-1104237.html>.

<sup>84</sup> See, e.g., Julian Morgans, *The Secret Ways Social Media is Built for Addiction*, Vice (May 17, 2017), <https://www.vice.com/en/article/vv5jkb/the-secret-ways-social-media-is-built-for-addiction>.

platforms by “link[ing] a user’s action (like pulling a lever) with a variable reward.”<sup>85</sup> For example, when “we swipe down our finger to scroll the Instagram feed, we’re playing a slot machine to see what photo comes next.”<sup>86</sup> Meta also delays the time it takes to load the feed. “This is because without that three-second delay, Instagram wouldn’t feel variable.”<sup>87</sup> Without that delay, there would be no time for users’ anticipation to build. In slot machine terms, there would be “no sense of *will I win?* because you’d know instantly. So the delay isn’t the app loading. It’s the cogs spinning on the slot machine.”<sup>88</sup> Each of the Defendants’ platforms exploits this biochemical reaction among its users, typically using “likes,” “hearts,” or other forms of approval that serve as the reward. *See infra* Section IV.D.1–4.

84. “Everyone innately responds to social approval, but some demographics, in particular teenagers, are more vulnerable to it than others.”<sup>89</sup>

85. Youth are especially vulnerable both to the ways in which Defendants manipulate users to maximize their “watch time,” and to the resulting harms. Children’s brains undergo a fundamental shift around age 10 that makes “preteens extra sensitive to attention and admiration from others.”<sup>90</sup> Consequently, Defendants’ use of IVR, reciprocity, and other “rewards” to maximize the time users spend on their platforms exploits a vulnerability unique to youth. This “extra sensitivity” also puts them at greater

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<sup>85</sup> Von Tristan Harris, *The Slot Machine in Your Pocket*, Spiegel Int’l (July 27, 2016), <https://www.spiegel.de/international/zeitgeist/smartphone-addiction-is-part-of-the-design-a-1104237.html>.

<sup>86</sup> *Id.*

<sup>87</sup> Julian Morgans, *The Secret Ways Social Media is Built for Addiction*, Vice (May 17, 2017), <https://www.vice.com/en/article/vv5jkb/the-secret-ways-social-media-is-built-for-addiction>.

<sup>88</sup> *Id.*

<sup>89</sup> Von Tristan Harris, *The Slot Machine in Your Pocket*, Spiegel Int’l (July 27, 2016), <https://www.spiegel.de/international/zeitgeist/smartphone-addiction-is-part-of-the-design-a-1104237.html>.

<sup>90</sup> Zara Abrams, *Why young brains are especially vulnerable to social media*, Am. Psych. Ass’n (Aug. 25, 2022), <https://www.apa.org/news/apa/2022/social-media-children-teens>.

risk.

86. In adolescence, the structures of the brain “closely tied” to social media activity and that drive instinctual behavior begin to change.<sup>91</sup> The ventral striatum is one of those structures. It receives a rush of dopamine and oxytocin, known as the “happy hormones[,]” whenever we experience social rewards.<sup>92</sup> Between the ages of 10 and 12, the receptors for those happy hormones begin to multiply in this region of the brain, which makes compliments on a new hairstyle, laughter from a classmate, or other social rewards “start to feel a lot more satisfying.”<sup>93</sup>

87. Historically, these biological changes incentivized kids and teens to develop healthy social skills and connections. “But arriving at school in a new pair of designer jeans, hoping your crush will smile at you in the hallway, is worlds away from posting a video on TikTok that may get thousands of views and likes,” according to Mitch Prinstein, Chief Science Officer for the American Psychology Association.<sup>94</sup>

88. Part of what makes the “interactions so different,”<sup>95</sup> is that they are often permanent and public in nature. There is no public ledger tracking the number of consecutive days you have spoken to someone, like there is for Snap “streaks.” Similarly, “[a]fter you walk away from a regular conversation, you don’t know if the other person liked it, or if anyone else liked it[.]”<sup>96</sup> Conversely, on Defendants’ platforms, kids, their friends, and even complete strangers can publicly deliver or withhold social rewards in the form of likes, comments, views, and follows.<sup>97</sup>

89. These social rewards release dopamine and oxytocin in the brains of youth and adults alike but there are two key differences, as Chief Science Officer Prinstein

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<sup>91</sup> *Id.*

<sup>92</sup> *Id.*

<sup>93</sup> *Id.*

<sup>94</sup> *Id.*

<sup>95</sup> *Id.*

<sup>96</sup> *Id.*

<sup>97</sup> *Id.*

explained: “First, adults tend to have a fixed sense of self that relies less on feedback from peers. Second, adults have a more mature prefrontal cortex, an area that can help regulate emotional responses to social rewards.”<sup>98</sup>

90. Adolescents, by contrast, are in a “period of personal and social identity formation,” much of which “is now reliant on social media.”<sup>99</sup> “Due to their limited capacity for self-regulation and their vulnerability to peer pressure,” adolescents “are at greater risk of developing mental disorder.”<sup>100</sup>

91. Together, Meta, Snap, TikTok, and Google have designed, refined, marketed, and operated their social media platforms to maximize the number of youths who use their platforms and the time they spend on those platforms. Despite knowing that social media inflicts harms on youth, Defendants have continued to create more sophisticated versions of their platforms with features designed to keep users engaged and maximize the amount of time they spend using social media. Defendants’ conduct in designing and marketing exploitive and manipulative platforms, youth spend excessive amounts of time on Defendants’ platforms.

92. Defendants’ efforts worked. The majority of teenagers use the same five social media platforms: YouTube, TikTok, Instagram, Snapchat, and Facebook.<sup>101</sup> Each of these platforms individually boasts high numbers of teenage users.

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<sup>98</sup> *Id.*

<sup>99</sup> Betül Keles *et al.*, *A systematic review: the influence of social media on depression, anxiety and psychological distress in adolescents*, *Int’l J. Adolescence & Youth* (202) 25:1, 79–93 (Mar. 3, 2019), [https://www.researchgate.net/publication/331947590\\_A\\_systematic\\_review\\_the\\_influence\\_of\\_social\\_media\\_on\\_depression\\_anxiety\\_and\\_psychological\\_distress\\_in\\_adolescent\\_s/fulltext/5c94432345851506d7223822/A-systematic-review-the-influence-of-social-media-on-depression-anxiety-and-psychological-distress-in-adolescents.pdf](https://www.researchgate.net/publication/331947590_A_systematic_review_the_influence_of_social_media_on_depression_anxiety_and_psychological_distress_in_adolescent_s/fulltext/5c94432345851506d7223822/A-systematic-review-the-influence-of-social-media-on-depression-anxiety-and-psychological-distress-in-adolescents.pdf).

<sup>100</sup> *Id.*

<sup>101</sup> Emily Vogels *et al.*, *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>.

**1. Meta Intentionally Marketed to and Designed Their Social Media Platforms for Youth Users, Substantially Contributing to the Mental Health Crisis**

**a. The Meta Platform**

93. The Meta platform, including Facebook and Instagram, are among the most popular social networking platforms in the world, with more than 3.6 billion users worldwide.<sup>102</sup>

**(i) The Facebook Platform**

94. Facebook is a social networking platform that is one of Meta's platforms.

95. Facebook was founded in 2004 and has become the largest social network in the world. As of October 2021, Facebook had approximately 2.9 billion monthly active users, approximately 2 billion of whom use Facebook every day.<sup>103</sup>

96. When Facebook was founded in 2004, only students at certain colleges and universities could use the social media platform, and verification of college enrollment was required to access Facebook.

97. In 2005, Facebook expanded and became accessible to students at more universities around the world, after which Meta launched a high school version of Facebook that also required an invitation to join.

98. Meta later expanded eligibility for Facebook to employees of several companies, including Apple and Microsoft, and added more universities to its network.

99. In September 2006, Facebook became available to all internet users. At the time, Meta claimed that it was open only to persons aged 13 and older with a valid email address; however, on information and belief, Meta did not in fact require verification of a

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<sup>102</sup> Felix Richter, *Meta Reaches 3.6 Billion People Each Month*, Statista (Oct. 29, 2021), <https://www.statista.com/chart/2183/facebooks-mobile-users/>.

<sup>103</sup> See *id.*; S. Dixon, *Number of Daily Active Facebook Users Worldwide as of 3rd Quarter 2022 (in Millions)*, Statista (Oct. 27, 2022), <https://www.statista.com/statistics/346167/facebook-global-dau/>.

user's age or identity and did not actually verify users' email addresses, such that underage users could easily register an account with and access Facebook.

100. Facebook then underwent a series of changes aimed at increasing user engagement and platform growth, without regard to user safety, including the following changes:

- In 2009, Facebook launched the “like” button;
- In 2011, Facebook launched Messenger, its direct messaging service, and started allowing people to subscribe to non-friends;
- In 2012, Facebook started showing advertisements in its news feed and launched a real-time bidding system through which advertisers could bid on users based on their visits to third-party websites;
- In 2014, Facebook's facial recognition algorithm (DeepFace) reached near-human accuracy in identifying faces;
- In 2015, Facebook made significant changes to its news feed algorithm to determine what content to show users and launched its live-streaming service;
- In 2016, Facebook launched games for its social media platform, so that users could play games without having to install new apps; and
- In 2017, Facebook launched Facebook Creator, an app for mobile video posts that assists with content creation.

## **(ii) The Instagram Platform**

101. Instagram is a social media platform that launched in 2010, which Meta acquired for \$1 billion in April 2012.

102. Instagram enables users to share photos and videos with other users and to view other users' photos and videos. These photos and videos appear on users' Instagram “feeds,” which are virtually bottomless, scrollable lists of content.

103. After being acquired by Meta, Instagram experienced exponential user growth, expanding from approximately 10 million monthly active users in September

2012 to more than one billion monthly active users worldwide today, including approximately 160 million users in the United States.<sup>104</sup>

104. Instagram’s user growth was driven by design and development changes to the Instagram platform that increased engagement at the expense of the health and well-being of Instagram’s users—especially the children using the platform.

105. For example, in August 2020, Instagram began hosting and recommending short videos to users, called Reels.<sup>105</sup> Like TikTok, Instagram allows users to view an endless feed of Reels that are recommended and curated to users by Instagram’s algorithm.

106. Instagram has become the most popular photo sharing social media platform among children in the United States—approximately 72 percent of children aged 13–17 in the United States use Instagram.<sup>106</sup>

**b. Meta Markets Its Platforms to Youth**

107. To maximize the revenue generated from relationships with advertisers, Meta has expended significant effort to attract youth, including teens and preteens, to its platforms, including designing features that appeal to them. Meta also views teenagers as a way to attract other potential users, such as by using teenagers to recruit parents who want to participate in their children’s lives as well as younger siblings who look to older siblings as models for which social media platforms to use and how to use them.<sup>107</sup>

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<sup>104</sup> S. Dixon, *Number of Instagram Users Worldwide from 2020 to 2025 (in Billions)*, Statista (May 23, 2022), <https://www.statista.com/statistics/183585/instagram-number-of-global-users/>.

<sup>105</sup> *Introducing Instagram Reels*, Instagram (Aug. 5, 2020), <https://about.instagram.com/blog/announcements/introducing-instagram-reels-announcement>.

<sup>106</sup> Katherine Schaeffer, *7 Facts About Americans and Instagram*, Pew Rsch. Ctr. (Oct. 7, 2021), <https://www.pewresearch.org/fact-tank/2021/10/07/7-facts-about-americans-and-instagram/>.

<sup>107</sup> Sheera Frenkel *et al.*, *Instagram Struggles with Fears of Losing Its ‘Pipeline’: Young Users*, N.Y. Times (Oct. 26, 2021), <https://www.nytimes.com/2021/10/16/technology/instagram-teens.html>.



108. Meta explicitly targets teenagers. An internal Instagram marketing plan reveals, Meta knows that “[i]f we lose the teen foothold in the U.S. we lose the pipeline” for growth.<sup>108</sup> To ensure that did not happen, Meta’s Instagram devoted almost all of its \$390 million annual marketing budget for 2018 to target teenagers.<sup>109</sup>

109. Meta also views preteens or “tweens” as a “valuable but untapped audience,” even contemplating “exploring playdates as a growth lever.”<sup>110</sup> Meta formed a team to study preteens, endeavored to create more products designed for them, and commissioned strategy papers regarding the “business opportunities” created.<sup>111</sup>

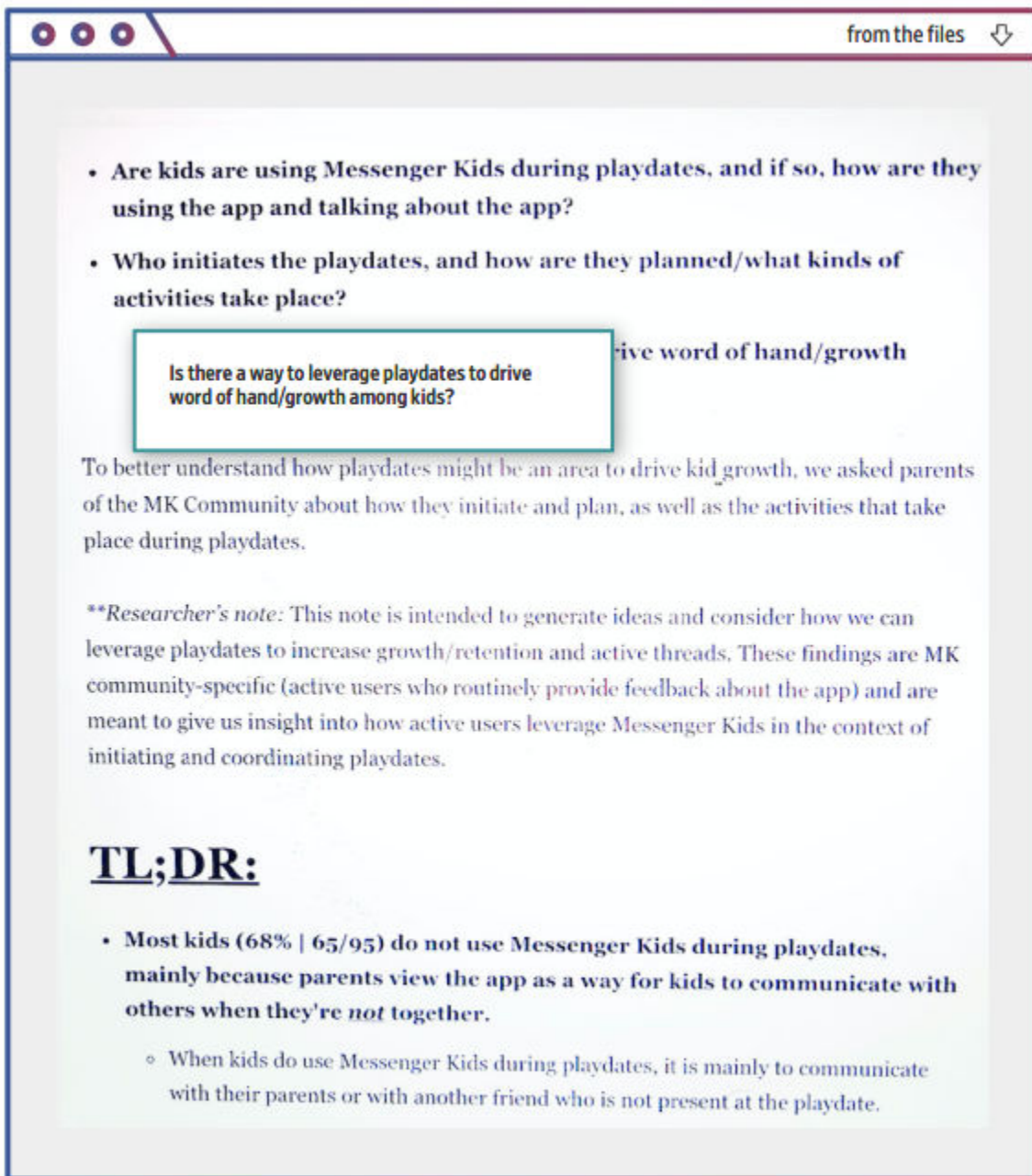
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<sup>108</sup> *Id.*

<sup>109</sup> *Id.*

<sup>110</sup> *Id.*

<sup>111</sup> Georgia Wells & Jeff Horwitz, *Facebook’s Effort to Attract Preteens Goes Beyond Instagram Kids, Documents Show; It has investigated how to engage young users in response to competition from Snapchat, TikTok; ‘Exploring playdates as a growth lever*, Wall St. J. (Sept. 28, 2021), <https://www.wsj.com/articles/facebook-instagram-kids-tweens-attract-11632849667>.



110. For these reasons, the Meta platforms are designed to be used by children and are actively marketed to children throughout the Meta markets in the United States. Meta advertises to children through its own efforts as well as through advertisers that create and target advertisements to children. Internal Meta documents establish that Meta spends hundreds of millions of dollars researching, analyzing, and marketing to children to find ways to make its platforms more appealing to these age groups and to maximize

the time they spend on its platforms, as these age groups are seen as essential to Meta’s long-term profitability and market dominance.<sup>112</sup> For instance, after Instagram’s founders left Meta in September 2018, “Facebook went all out to turn Instagram into a main attraction for young audiences,” and “began concentrating on the ‘teen time spent’ data point,” in order to “drive up the amount of time that teenagers were on the app with features including Instagram Live, a broadcasting tool, and Instagram TV, where people upload videos that run as long as an hour.”<sup>113</sup>

111. Similarly, Instagram’s popularity among young people is the result of Meta’s deliberate efforts to target children—which in turn is driven by the desire of advertisers and marketers to target children on Meta’s platforms. In fact, Meta’s acquisition of Instagram was primarily motivated by its desire to make up for declines in the use of Facebook by children, and Meta views Instagram as central to its ability to attract and retain young audiences. A 2018 internal Meta marketing report is indicative of this, lamenting the loss of teenage users to competitors’ platforms as “an existential threat.”<sup>114</sup> In contrast, a Meta presentation from 2019 indicated that “Instagram is well positioned to resonate and win with young people,” and “[t]here is a path to growth if Instagram can continue their trajectory.”<sup>115</sup>

112. With respect to pre-teens, Meta’s policy is that they cannot register an account, but it knowingly lacks effective age-verification protocols. Since at least 2011, Meta has known that its age-verification protocols are largely inadequate, estimating at

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<sup>112</sup> *Id.*

<sup>113</sup> Sheera Frenkel *et al.*, *Instagram Struggles with Fears of Losing Its ‘Pipeline’: Young Users*, N.Y. Times (Oct. 26, 2021), <https://www.nytimes.com/2021/10/16/technology/instagram-teens.html>.

<sup>114</sup> *Id.*

<sup>115</sup> Georgia Wells *et al.*, *Facebook Knows Instagram Is Toxic for Teen Girls, Company Documents Show; Its own in-depth research shows a significant teen mental-health issue that Facebook plays down in public*, Wall St. J. (Sept. 14, 2021), <https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739>.

that time that it removed 20,000 children under age 13 from Facebook every day.<sup>116</sup> In 2021, Adam Mosseri, the Meta executive in charge of Instagram, acknowledged users under 13 can still “lie about [their] age now,” to register an account.<sup>117</sup>

113. Meta has yet to implement protocols to verify a users’ age, presumably because it has strong business incentives not to or to laxly enforce its policy. Meta also has agreements with cell phone manufacturers and/or providers and/or retailers, who often pre-install its platforms on mobile devices prior to sale and without regard to the age of the intended user of each such device. That is, even though Meta is prohibited from providing the Meta platforms to users under the age of 13, Meta actively promotes and provides underage users access to its platforms by encouraging and allowing cell phone manufacturers to pre-install the platforms on mobile devices indiscriminately. Consequently, approximately 11 percent of United States children between the ages of 9 and 11 used Instagram in 2020,<sup>118</sup> despite Meta claiming to remove approximately 600,000 underage users per quarter.<sup>119</sup>

114. Meta’s efforts to attract young users have been successful. *See supra* Section IV.A. In a recent study, 62 percent of children ages 13–17 reported they have

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<sup>116</sup> Austin Carr, *Facebook Booting “20,000” Underage Users Per Day: Reaction to Growing Privacy Concerns?*, Fast Co. (Mar. 22, 2011), <https://www.fastcompany.com/1741875/facebook-booting-20000-underage-users-day-reaction-growing-privacy-concerns>.

<sup>117</sup> Georgia Wells & Jeff Horwitz, *Facebook’s Effort to Attract Preteens Goes Beyond Instagram Kids, Documents Show; It has investigated how to engage young users in response to competition from Snapchat, TikTok; ‘Exploring playdates as a growth lever*, Wall St. J. (Sept. 28, 2021), <https://www.wsj.com/articles/facebook-instagram-kids-tweens-attract-11632849667>.

<sup>118</sup> Brooke Auxier *et al.*, *Parenting Children in the Age of Screens*, Pew Rsch. Ctr. (July 28, 2020), <https://www.pewresearch.org/internet/2020/07/28/childrens-engagement-with-digital-devices-screen-time/>.

<sup>119</sup> Georgia Wells & Jeff Horwitz, *Facebook’s Effort to Attract Preteens Goes Beyond Instagram Kids, Documents Show; It has investigated how to engage young users in response to competition from Snapchat, TikTok; ‘Exploring playdates as a growth lever*, Wall St. J. (Sept. 28, 2021), <https://www.wsj.com/articles/facebook-instagram-kids-tweens-attract-11632849667>.

used the Instagram app and 32 percent of children ages 13–17 reported they have used the Facebook app or website.

**c. Meta Intentionally Maximizes the Time Users Spend on its Platforms**

115. The Meta platforms are designed to maximize user engagement, using features that exploit the natural human desire for social interaction and the neurophysiology of the brain’s reward systems to keep users endlessly scrolling, posting, “liking,” commenting, and counting the number of “likes” and comments to their own posts. The still-developing brains of children are particularly vulnerable to such exploitation.

116. One of the ways in which Meta employs IVR is through its push notifications and emails, which encourage habitual use and are designed to prompt users to open and be exposed to content selected to maximize the use of Meta’s platforms and the ads run on them. In particular, Meta spaces out notifications of likes and comments into multiple bursts rather than notifying users in real time, so as to create dopamine gaps that leave users craving in anticipation for more. In this regard, Meta’s push notifications and emails are specifically designed to manipulate users into reengaging with Meta’s platforms to increase user engagement regardless of a user’s health or wellbeing.

117. Meta also exploits IVR to manipulate users with one of its most defining features: the “Like” button. Meta knows “Likes” are a source of social comparison harm for many users, as detailed below. Several Meta employees involved in creating the Like button have since left Meta and have spoken publicly about the manipulative nature of Meta’s platforms and the harm they cause users.<sup>120</sup>

118. Additionally, Meta designed other features of its platforms on IVR principles, such as posts, comments, tagging, and the “pull to refresh” feature (which is

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<sup>120</sup> See, e.g., Paul Lewis, *‘Our minds can be hijacked’: the tech insiders who fear a smartphone dystopia*, Guardian (Oct. 6, 2017), <https://www.theguardian.com/technology/2017/oct/05/smartphone-addiction-silicon-valley-dystopia>.

similar to the way that slot machines work).

119. Other design decisions were motivated by reciprocity, such as the use of visual cues to reflect that someone is currently writing a message (a feature designed to keep a user on the platform until they receive the message), and alerting users when a recipient has read their message (which encourages the recipient to respond and return to the platform to check for a response).

120. The Meta platforms are designed to encourage users to post content and to like, comment, and interact with other users' posts. Each new post that appears on a user's feed functions as a dopamine-producing social interaction in the user's brain. Similarly, likes, comments, and other interactions with user's posts function as an even stronger dopamine-producing stimulus than does seeing new posts from other users. This in turn drives users to generate content they expect will generate many likes and comments. In this regard, Meta has designed its platforms to function in concert, as popular content posted by other users psychologically compels users to post similar content themselves, trapping users—especially youth—in endless cycles of “little dopamine loops.”<sup>121</sup>

**d. Meta's Algorithms Are Manipulative and Harmful**

121. Meta also employs advanced computer algorithms and artificial intelligence to make its platforms as engaging and habit forming as possible for users. For example, the Meta platforms display curated content and employ recommendations that are customized to each user by using sophisticated algorithms. The proprietary services developed through such algorithms include News Feed (a newsfeed of stories and posts published on the platform, some of which are posted by connections and others that are suggested by Meta's algorithms), People You May Know (algorithm-based suggestions

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<sup>121</sup> Allison Slater Tate, *Facebook whistleblower Frances Haugen says parents make 1 big mistake with social media*, Today (Feb. 7, 2022), <https://www.today.com/parents/teens/facebook-whistleblower-frances-haugen-rcna15256>.

of persons with common connections or background), Suggested for You, Groups You Should Join, and Discover (algorithm-based recommendations of groups). Such algorithm-based content and recommendations are pushed to each user in a steady stream as the user navigates the platform as well as through notifications sent to the user's smartphone and email addresses when the user is disengaged with the platform.

122. Meta's algorithms are not based exclusively on user requests or even user inputs. Meta's algorithms combine information entered or posted by the user on the platform with the user's demographics and other data points collected and synthesized by Meta, make assumptions about that user's interests and preferences, make predictions about what else might appeal to the user, and then make very specific recommendations of posts and pages to view and groups to visit and join based on rankings that will optimize Meta's key performance indicators. In this regard, Meta's design dictates the way content is presented, such as its ranking and prioritization.<sup>122</sup>

123. Meta's current use of algorithms in its platforms is driven and designed to maximize user engagement. Over time, Meta has gradually transitioned away from chronological ranking, which organized the interface according to when content was posted or sent, to prioritize Meaningful Social Interactions ("MSI"), which emphasizes users' connections and interactions such as likes and comments and gives greater significance to the interactions of connections that appeared to be the closest to users. Meta thus developed and employed an "amplification algorithm" to execute engagement-based ranking, which considers a post's likes, shares, and comments, as well as a respective user's past interactions with similar content, and exhibits the post in the user's newsfeed if it otherwise meets certain benchmarks.

124. Meta's algorithms covertly operate on the principle that intense reactions

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<sup>122</sup> See, e.g., Adam Mosseri, *Shedding More Light on How Instagram Works*, Instagram (June 8, 2021), <https://about.instagram.com/blog/announcements/shedding-more-light-on-how-instagram-works>.

invariably compel attention. Because these algorithms measure reactions and contemporaneously immerse users in the most reactive content, these algorithms effectively work to steer users toward the most negative content, because negative content routinely elicits passionate reactions.

125. Due to its focus on user engagement, Meta’s algorithms promote content that is objectionable and harmful to many users. As set forth in greater detail below, Meta was well aware of the harmful content that it was promoting but failed to change its algorithms because the inflammatory content that its algorithms were feeding to users fueled their return to the platforms and led to more engagement—which in turn helped Meta sell more advertisements that generate most of its revenue. As such, Meta’s algorithms promote harmful content because such content increases user engagement, which thereby increases its appeal to advertisers and increases its overall value and profitability.

126. Meta’s shift from chronological ranking to algorithm-driven content and recommendations has changed the Meta platforms in ways that are profoundly dangerous and harmful to children, whose psychological susceptibility to habit-forming platforms put them at great risk of harm from the Meta platforms’ exploitive and harmful features. In this regard, the algorithms used by Meta’s platforms exploit child users’ diminished decision-making capacity, impulse control, emotional maturity, and psychological resiliency caused by users’ incomplete brain development—and Meta specifically designs its platforms with these vulnerabilities in mind.

**e. Meta’s Harmful “Feeds”**

127. Both Facebook and Instagram show each user a “feed” that is generated by an algorithm for that user, which consists of a series of photos and videos posted by accounts that the user follows, along with advertising and content specifically selected and promoted by Meta.

128. These feeds are virtually bottomless lists of content that enable users to



scroll endlessly without any natural end points that would otherwise encourage them to move on to other activities. In this regard, “[u]nlike a magazine, television show, or video game,” the Meta platforms only rarely prompt their users to take a break by using “stopping cues.”<sup>123</sup> Meta’s “bottomless scrolling” feature is designed to encourage users to use its platforms for unlimited periods of time.

129. Meta also exerts control over a user’s feed through certain ranking mechanisms, escalation loops, and promotion of advertising and content specifically selected and promoted by Meta based on, among other things, its ongoing planning, assessment, and prioritization of the types of information most likely to increase user engagement.

130. As described above, the algorithms generating a user’s feed encourage excessive use and promote harmful content, particularly where the algorithm is designed to prioritize the number of interactions rather than the quality of interactions.

131. In this regard, Meta utilizes private information of its child users to “precisely target [them] with content and recommendations, assessing what will provoke a reaction,” including encouragement of “destructive and dangerous behaviors,” which is how Meta “can push teens into darker and darker places.”<sup>124</sup> As such, Meta’s “amplification algorithms, things like engagement based ranking . . . can lead children . . . all the way from just something innocent like healthy recipes to anorexia promoting content over a very short period of time.”<sup>125</sup> Meta thus specifically selects and pushes this harmful content on its platforms, for which it is then paid, and does so both for direct

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<sup>123</sup> See Zara Abrams, *How Can We Minimize Instagram’s Harmful Effects?*, Am. Psych. Ass’n (Dec. 2, 2021), <https://www.apa.org/monitor/2022/03/feature-minimize-instagram-effects>.

<sup>124</sup> See *Facebook Whistleblower Frances Haugen Testifies on Children & Social Media Use: Full Senate Hearing Transcript* at 09:02, Rev (Oct. 5, 2021), <https://www.rev.com/blog/transcripts/facebook-whistleblower-frances-haugen-testifies-on-children-social-media-use-full-senate-hearing-transcript> (statement by Mr. Chairman Blumenthal).

<sup>125</sup> *Id.* at 37:34 (statement by Ms. Frances Haugen).

profit and also to increase user engagement, resulting in additional profits down the road.

132. As one example, in 2021, Senators Richard Blumenthal, Marsha Blackburn and Mike Lee tested and confirmed the fact that Meta’s platforms’ recommendation-based feeds and features promote harmful content by opening test accounts purporting to be teenage girls. Senator Blumenthal stated that, “[w]ithin an hour all our recommendations promoted pro-anorexia and eating disorder content.”<sup>126</sup> Likewise, Senator Lee found that an account for a fake 13-year-old girl was quickly “flooded with content about diets, plastic surgery and other damaging material for an adolescent girl.”<sup>127</sup>

133. Meta’s Instagram platform features a feed of “Stories,” which are short-lived photo or video posts that are accessible only for 24 hours. This feature encourages constant, repeated, and compulsive use of Instagram, so that users do not miss out on content before it disappears. As with other feeds, the presentation of content in a user’s Stories is generated by an algorithm designed by Meta to maximize the amount of time a user spends on the app.

134. Instagram also features a feed called “Explore,” which displays content posted by users not previously “followed.” The content in “Explore” is selected and presented by an algorithm designed by Meta to maximize the amount of time a user spends on the app. As with other feeds, the Explore feature may be scrolled endlessly, and its algorithm will continually generate new recommendations, encouraging users to use the app for unlimited periods of time.

135. Instagram also features a feed called “Reels,” which presents short video posts by users not previously followed. These videos play automatically, without input

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<sup>126</sup> Vanessa Romo, *4 Takeaways from Senators' Grilling of Instagram's CEO About Kids and Safety*, NPR (Dec. 8, 2021, 10:13 PM), <https://www.npr.org/2021/12/08/1062576576/instagrams-ceo-adam-mosseri-hears-senators-brush-aside-his-promises-to-self-poli>.

<sup>127</sup> *Id.*

from the user, encouraging the user to stay on the app for indefinite periods of time. As with other feeds, Reels content is selected and presented by an algorithm designed by Meta to maximize the amount of time a user spends on the app.

**f. For Years, Meta Has Been Aware That Its Platforms Harm Children**

136. In an internal slide presentation in 2019, Meta’s own researchers studying Instagram’s effects on children concluded that “[w]e make body image issues worse for one in three teen girls[.]”<sup>128</sup> This presentation was one of many documents leaked by former Meta employee Frances Haugen to journalists at the *Wall Street Journal* and federal regulators in 2021.<sup>129</sup> The *Wall Street Journal*’s reporting on the documents began in September 2021 and caused a national and international uproar.

137. The leaked documents confirmed what social scientists have long suspected, that social media platforms like Meta’s—and Instagram in particular—can cause serious harm to the mental and physical health of children. Moreover, this capacity for harm is by design—what makes the Meta platforms profitable is precisely what harms its young users.

138. Upon information and belief, at least as far back as 2019, Meta initiated a Proactive Incident Response experiment, which began researching the effect of Meta on

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<sup>128</sup> Georgia Wells *et al.*, *Facebook Knows Instagram Is Toxic for Teen Girls, Company Documents Show; Its own in-depth research shows a significant teen mental-health issue that Facebook plays down in public*, *Wall St. J.* (Sept. 14, 2021), <https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739>.

<sup>129</sup> The *Wall Street Journal* and *Digital Wellbeing* published several of these documents in November 2021. *See* Paul Marsden, *The ‘Facebook Files’ on Instagram Harms—All Leaked Slides on a Single Page*, *Digit. Wellbeing* (Oct. 20, 2021), <https://digitalwellbeing.org/the-facebook-files-on-instagram-harms-all-leaked-slides-on-a-single-page/>. Gizmodo also started publishing these documents in November 2021. *See* Dell Cameron *et al.*, *Read the Facebook Papers for Yourself*, *Gizmodo* (Apr. 18, 2022), <https://gizmodo.com/facebook-papers-how-to-read-1848702919>.

the mental health of today’s children.<sup>130</sup> Meta’s own in-depth analyses show significant mental-health issues stemming from the use of Instagram among teenage girls, many of whom linked suicidal thoughts and eating disorders to their experiences on the app.<sup>131</sup> In this regard, Meta’s researchers have repeatedly found that Instagram is harmful for a sizable percentage of teens that use the platform.<sup>132</sup>

139. In particular, the researchers found that “[s]ocial comparison,” or peoples’ assessment of their own value relative to that of others, is “worse on Instagram” for teens than on other social media platforms.<sup>133</sup> One in five teens reported that Instagram “makes them feel worse about themselves.”<sup>134</sup> Roughly two in five teen users reported feeling “unattractive,” while one in 10 teen users reporting suicidal thoughts traced them to Instagram.<sup>135</sup> Teens “consistently” and without prompting blamed Instagram “for increases in the rate of anxiety and depression.”<sup>136</sup> And although teenagers identify Instagram as a source of psychological harm, they often lack the self-control to use Instagram less. Also, according to Meta’s own researchers, young users are not capable of controlling their Instagram use to protect their own health.<sup>137</sup> Such users “often feel ‘addicted’ and know that what they’re seeing is bad for their mental health but feel unable to stop themselves.”<sup>138</sup>

140. Similarly, in a March 2020 presentation posted to Meta’s internal message

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<sup>130</sup> See *Facebook Whistleblower Testifies on Protecting Children Online*, C-SPAN (Oct. 5, 2021), <https://www.c-span.org/video/?515042-1/whistleblower-frances-haugen-calls-congress-regulate-facebook>.

<sup>131</sup> See Georgia Wells *et al.*, *Facebook Knows Instagram Is Toxic for Teen Girls, Company Documents Show*, Wall St. J. (Sept. 14, 2021, 7:59 AM), [https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739?mod=hp\\_lead\\_pos7&mod=article\\_inline](https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739?mod=hp_lead_pos7&mod=article_inline).

<sup>132</sup> *Id.*

<sup>133</sup> *Id.*

<sup>134</sup> *Id.*

<sup>135</sup> *Id.*

<sup>136</sup> *Id.*

<sup>137</sup> *Id.*

<sup>138</sup> *Id.*

board, researchers found that “[t]hirty-two percent of teen girls said that when they felt bad about their bodies, Instagram made them feel worse.”<sup>139</sup> Sixty-six percent of teen girls and 40 percent of teen boys have experienced negative social comparison harms on Instagram.<sup>140</sup> Further, approximately 13 percent of teen-girl Instagram users say the platform makes thoughts of “suicide and self-harm” worse, and 17 percent of teen-girl Instagram users say the platform makes “[e]ating issues” worse.<sup>141</sup> Meta’s researchers also acknowledged that “[m]ental health outcomes” related to the use of Instagram “can be severe,” including “Body Dissatisfaction,” “Body Dysmorphia,” “Eating Disorders,” “Loneliness,” and “Depression.”<sup>142</sup>

141. Not only is Meta aware of the harmful nature of the Meta platforms, the leaked documents reveal that Meta is aware of the specific design features that lead to

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<sup>139</sup> *Id.*; *Teen Girls Body Image and Social Comparison on Instagram—An Exploratory Study in the U.S.*, Wall St. J. (Sept. 29, 2021), <https://digitalwellbeing.org/wp-content/uploads/2021/10/Facebook-Files-Teen-Girls-Body-Image-and-Social-Comparison-on-Instagram.pdf>; see also *Hard Life Moments-Mental Health Deep Dive* at 14, Facebook (Nov. 2019), <https://about.fb.com/wp-content/uploads/2021/09/Instagram-Teen-Annotated-Research-Deck-1.pdf>; Paul Marsden, *The ‘Facebook Files’ on Instagram arms – all leaked slides on a single page* at slide 14, Dig. Wellbeing (Oct. 20, 2021) <https://digitalwellbeing.org/the-facebook-files-on-instagram-harms-all-leaked-slides-on-a-single-page> (hard life moment – mental health deep dive).

<sup>140</sup> *Teen Girls Body Image and Social Comparison on Instagram—An Exploratory Study in the U.S.* at 9, Wall St. J. (Sept. 29, 2021), <https://digitalwellbeing.org/wp-content/uploads/2021/10/Facebook-Files-Teen-Girls-Body-Image-and-Social-Comparison-on-Instagram.pdf>.

<sup>141</sup> *Hard Life Moments-Mental Health Deep Dive* at 14, Facebook (Nov. 2019), <https://about.fb.com/wp-content/uploads/2021/09/Instagram-Teen-Annotated-Research-Deck-1.pdf>; Paul Marsden, *The Facebook Files’ on Instagram arms – all leaked slides on a single page* at slide 14, Dig. Wellbeing (Oct. 20, 2021), <https://digitalwellbeing.org/the-facebook-files-on-instagram-harms-all-leaked-slides-on-a-single-page>.

<sup>142</sup> *Teen Girls Body Image and Social Comparison on Instagram—An Exploratory Study in the U.S.* at 34, Wall St. J. (Sept. 29, 2021), <https://digitalwellbeing.org/wp-content/uploads/2021/10/Facebook-Files-Teen-Girls-Body-Image-and-Social-Comparison-on-Instagram.pdf>.

excessive use and harm to children. For instance, Meta knows that Instagram’s Explore, Feed, and Stories features contribute to social comparison harms “in different ways.”<sup>143</sup> Moreover, specific “[a]spects of Instagram exacerbate each other to create a perfect storm” of harm to users, and that the “social comparison sweet spot”—a place of considerable harm to users, particularly teenagers and teen girls—lies at the center of Meta’s model and platforms’ features.<sup>144</sup> In this regard, Meta’s researchers wrote that “[s]ocial comparison and perfectionism are nothing new, but young people are dealing with this on an unprecedented scale,” and “[c]onstant comparison on Instagram is ‘the reason’ why there are higher levels of anxiety and depression in young people.”<sup>145</sup>

## **2. Snapchat Intentionally Marketed to and Designed Its Social Media Platform for Youth Users, Substantially Contributing to the Mental Health Crisis**

### **a. The Snapchat Platform**

142. Snapchat was created in 2011 by Stanford University students Evan Spiegel and Bobby Murphy, who serve as Snap Inc.’s CEO and CTO respectively.<sup>146</sup>

143. Snapchat started as a photo sharing platform that allows users to form groups and share photos, known as “snaps,” that disappear after being viewed by the recipients. Snapchat became well known for this self-destructing content feature. But Snapchat quickly evolved from a simple photo-sharing app, as Snap made design changes and rapidly developed new features aimed at and ultimately increasing Snapchat’s popularity among teenage users.

144. In 2012, Snap added video sharing capabilities, pushing the number of

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<sup>143</sup> *Id.* at 31.

<sup>144</sup> *Id.* at 33.

<sup>145</sup> See *Hard Life Moments-Mental Health Deep Dive* at 53, Facebook (Nov. 2019), <https://about.fb.com/wp-content/uploads/2021/09/Instagram-Teen-Annotated-Research-Deck-1.pdf>.

<sup>146</sup> Katie Benner, *How Snapchat is Shaping Social Media*, N.Y. Times (Nov. 30, 2016), <https://www.nytimes.com/2016/11/30/technology/how-snapchat-works.html>.

“snaps” to 50 million per day.<sup>147</sup> A year later, Snap added the “Stories” function, which allows users to upload a rolling compilation of snaps that the user’s friends can view for 24 hours.<sup>148</sup> The following year, Snap added a feature that enabled users to communicate with one another in real time via text or video.<sup>149</sup> It also added the “Our Story” feature, expanding on the original stories function by allowing users in the same location to add their photos and videos to a single publicly viewable content stream.<sup>150</sup> At the same time, Snap gave users the capability to add filters and graphic stickers onto photos indicating a user’s location, through a feature it refers to as “Geofilters.”<sup>151</sup>

145. In 2015, Snap added a “Discover” feature that promotes videos from news outlets and other content creators.<sup>152</sup> Users can watch that content by scrolling through the Discover feed. After the selected video ends, Snapchat automatically plays other video content in a continuous stream unless or until a user manually exits the stream.

146. In 2020, Snap added the “Spotlight” feature through which it serves users “an endless feed of user-generated content” Snap curates from the 300 million daily

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<sup>147</sup> J.J. Colao, *Snapchat Adds Video, Now Seeing 50 Million Photos A Day*, Forbes (Dec. 14, 2012), <https://www.forbes.com/sites/jjcolao/2012/12/14/snapchat-adds-video-now-seeing-50-million-photos-a-day/?sh=55425197631b>.

<sup>148</sup> Ellis Hamburger, *Snapchat’s Next Big Thing: ‘Stories’ That Don’t Just Disappear*, Verge (Oct. 3, 2013), <https://www.theverge.com/2013/10/3/4791934/snapchats-next-big-thing-stories-that-dont-just-disappear>.

<sup>149</sup> Romain Dillet, *Snapchat Adds Ephemeral Text Chat and Video Calls*, TechCrunch (May 1, 2014), <https://techcrunch.com/2014/05/01/snapchat-adds-text-chat-and-video-calls/>.

<sup>150</sup> Laura Stampler, *Snapchat Just Unveiled a New Feature*, Time (June 17, 2014), <https://time.com/2890073/snapchat-new-feature/>.

<sup>151</sup> Angela Moscaritolo, *Snapchat Adds ‘Geofilters’ in LA, New York*, PC Mag. (July 15, 2014), <https://www.pcmag.com/news/snapchat-adds-geofilters-in-la-new-york>.

<sup>152</sup> Steven Tweedie, *How to Use Snapchat’s New ‘Discover’ Feature*, Bus. Insider (Jan. 27, 2015), <https://www.businessinsider.com/how-to-use-snapchat-discover-feature-2015-1>.

Snapchat users.<sup>153</sup>

147. Today, Snapchat is one of the largest social media platforms in the world. By its own estimates, Snapchat has 363 million daily users, including 100 million daily users in North America.<sup>154</sup> Snapchat reaches 90 percent of people ages 13–24 in over twenty countries and reaches nearly half of all smartphone users in the United States.<sup>155</sup>

**b. Snap Markets Its Platform to Youth**

148. Snapchat’s commercial success is due to its advertising. In 2014, Snap began running advertisements on Snapchat.<sup>156</sup> Since then, Snapchat’s business model has revolved around its advertising revenue, which has boomed. Snap now expects to generate \$4.86 billion in Snapchat advertising revenue for 2022.<sup>157</sup>

149. Snap specifically markets Snapchat to children ages 13–17 because they are a key demographic for Snap’s advertising business. Internal documents describe users between the ages of 13–34 as “critical” to Snap’s advertising success because of the common milestones achieved within that age range.<sup>158</sup>

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<sup>153</sup> Salvador Rodriguez, *Snap is launching a competitor to TikTok and Instagram Reels*, CNBC (Nov. 23, 2020), <https://www.cnbc.com/2020/11/23/snap-launching-a-competitor-to-tiktok-and-instagram-reels.html>.

<sup>154</sup> *October 2022 Investor Presentation* at 5, Snap Inc. (Oct. 20, 2022), <https://investor.snap.com/events-and-presentations/presentations/default.aspx>.

<sup>155</sup> *Id.* at 6–7.

<sup>156</sup> Sara Fischer, *A timeline of Snap’s advertising, from launch to IPO*, Axios (Feb. 3, 2017), <https://www.axios.com/2017/12/15/a-timeline-of-snaps-advertising-from-launch-to-ipo-1513300279>.

<sup>157</sup> Bhanvi Staija, *TikTok’s ad revenue to surpass Twitter and Snapchat combined in 2022*, Reuters (Apr. 11, 2022), <https://www.reuters.com/technology/tiktoks-ad-revenue-surpass-twitter-snapchat-combined-2022-report-2022-04-11/>.

<sup>158</sup> *October 2022 Investor Presentation* at 27, Snap Inc. (Oct. 20, 2022), <https://investor.snap.com/events-and-presentations/presentations/default.aspx>.



150. While Snap lumps teenagers in with younger adults in its investor materials, Snap marketing materials featuring young models reveal its priority market:



151. In addition to its marketing, Snap has targeted a younger audience by designing Snapchat in a manner that older individuals find hard to use.<sup>159</sup> The effect of this design is that Snapchat is a platform where its young users are insulated from older users including their parents. As Snap’s CEO explained, “[w]e’ve made it very hard for parents to embarrass their children[.]”<sup>160</sup>

152. Snap also designed Snapchat as a haven for young users to hide content from their parents by ensuring that photos, videos, and chat messages quickly disappear.

<sup>159</sup> See Hannah Kuchler & Tim Bradshaw, *Snapchat’s Youth Appeal Puts Pressure on Facebook*, Fin. Times (Aug. 21, 2017), <https://www.ft.com/content/07e4dc9e-86c4-11e7-bf50-e1c239b45787>.

<sup>160</sup> Max Chafkin & Sarah Frier, *How Snapchat Built a Business by Confusing Olds*, Bloomberg (Mar. 3, 2016), <https://www.bloomberg.com/features/2016-how-snapchat-built-a-business/>.

This design further insulates children from adult oversight.

153. Moreover, Snap added as a feature the ability for users to create cartoon avatars modeled after themselves.<sup>161</sup> By using an artform generally associated with and directed at younger audiences, Snap further designed Snapchat to entice teenagers and younger children.

154. In 2013, Snap also marketed Snapchat specifically to kids under 13 through a feature it branded “SnapKidz.”<sup>162</sup> This feature—part of the Snapchat platform—allowed children under 13 to take photos, draw on them, and save them locally on the device.<sup>163</sup> Kids could also send these images to others or upload them to other social media sites.<sup>164</sup>

155. While SnapKidz feature was later discontinued and Snap purports to now prohibit users under the age of 13, its executives have admitted that its age verification “is effectively useless in stopping underage users from signing up to the Snapchat app.”<sup>165</sup>

156. Snap’s efforts to attract young users have been successful. *See supra* Section IV.A. Teenagers consistently name Snapchat as a favorite social media platform. The latest figures show 13 percent of children ages 8–12 used Snapchat in 2021,<sup>166</sup> and

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<sup>161</sup> Kif Leswing, *Snapchat just introduced a feature it paid more than \$100 million for*, Bus. Insider (July 19, 2016), <https://www.businessinsider.com/snapchat-just-introduced-a-feature-it-paid-more-than-100-million-for-2016-7>.

<sup>162</sup> Larry Magid, *Snapchat Creates SnapKidz – A Sandbox for Kids Under 13*, Forbes (June 23, 2013), <https://www.forbes.com/sites/larrymagid/2013/06/23/snapchat-creates-snapkidz-a-sandbox-for-kids-under-13/?sh=7c682a555e5a>.

<sup>163</sup> *Id.*

<sup>164</sup> *Id.*

<sup>165</sup> Isobel Asher Hamilton, *Snapchat admits its age verification safeguards are effectively useless*, Bus. Insider (Mar. 19, 2019), <https://www.businessinsider.com/snapchat-says-its-age-verification-safeguards-are-effectively-useless-2019-3>.

<sup>166</sup> Victoria Rideout *et al.*, *Common Sense Census: Media use by tweens and teens, 2021* at 5, Common Sense Media (2022), [https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web\\_0.pdf](https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf).

almost 60 percent of children ages 13–17 use Snapchat.<sup>167</sup>

**c. Snap Intentionally Maximizes the Time Users Spend on its Platform**

157. Snap promotes excessive use of its platform through design features and manipulative algorithms intended to maximize users’ screen time.

158. Snap has implemented inherently and intentionally exploitive features into Snapchat, including “Snapstreaks,” various trophies and reward systems, quickly disappearing (“ephemeral”) messages, and filters. Snap designed these features, along with others, to maximize the amount of time users spend on Snapchat.

159. Snaps are intended to manipulate users by activating the rule of reciprocity.<sup>168</sup> Whenever a user gets a snap, they feel obligated to send a snap back. And Snapchat tells users each time they receive a snap by pushing a notification to the recipient’s cellphone. These notifications are designed to prompt users to open Snapchat and view content, increasing the amount of time users spend on Snapchat. Further, because snaps disappear within ten seconds of being viewed, users feel compelled to reply immediately. This disappearing nature of snaps is a defining characteristic of Snapchat and intended keep users on the platform.

160. Snap also keeps users coming back to the Snapchat platform through the “Snapstreaks” feature.<sup>169</sup> A “streak” is a counter within Snapchat that tracks how many

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<sup>167</sup> Emily Vogels *et al.*, *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>.

<sup>168</sup> Nir Eyal, *The Secret Psychology of Snapchat*, Nir & Far (Apr. 14, 2015), <https://www.nirandfar.com/psychology-of-snapchat/>.

<sup>169</sup> See Avery Hartmans, *These are the sneaky ways apps like Instagram, Facebook, Tinder lure you in and get you ‘addicted’*, Bus. Insider (Feb. 17 2018), <https://www.businessinsider.com/how-app-developers-keep-us-addicted-to-our-smartphones-2018-1#snapchat-uses-snapstreaks-to-keep-you-hooked-13>; see generally Virginia Smart & Tyana Grundig, *‘We’re designing minds’: Industry insider reveals secrets of addictive app trade*, CBC (Nov. 3, 2017), <https://www.cbc.ca/news/science/marketplace-phones-1.4384876>; Julian Morgans, *The Secret Ways Social Media is Built for Addiction*, Vice (May 17, 2017),

consecutive days two users have sent each other snaps. If a user fails to snap the other user within 24 hours, the streak ends. Snap adds extra urgency by putting an hourglass emoji next to a friend's name if a Snapchat streak is about to end.<sup>170</sup> This design implements a system where a user must “check constantly or risk missing out.”<sup>171</sup> And this feature is particularly effective on teenage users. “For teens in particular, streaks are a vital part of using the app, and of their social lives as a whole.”<sup>172</sup> Some children become so obsessed with maintaining a Snapstreak that they give their friends access to their accounts when they may be away from their phone for a day or more, such as on vacation.<sup>173</sup>

161. Snap also designed features that operate on IVR principles to maximize the time users are on its platform. The “rewards” come in the form of a user’s “Snapscore,” and other signals of recognition similar to “likes” used in other platforms. For example, a Snapscore increases with each snap a user sends and receives. The increase in score and other trophies and charms users can earn by using the app operate on variable reward patterns. Like Snapstreaks, these features are designed to incentivize sending snaps and

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<https://www.vice.com/en/article/vv5jkb/the-secret-ways-social-media-is-built-for-addiction>.

<sup>170</sup> Lizette Chapman, *Inside the Mind of a Snapchat Streaker*, Bloomberg (Jan. 30, 2017), <https://www.bloomberg.com/news/features/2017-01-30/inside-the-mind-of-a-snapchat-streaker>.

<sup>171</sup> *Id.*

<sup>172</sup> Avery Hartmans, *These are the sneaky ways apps like Instagram, Facebook, Tinder lure you in and get you ‘addicted’*, Bus. Insider (Feb. 17 2018), <https://www.businessinsider.com/how-app-developers-keep-us-addicted-to-our-smartphones-2018-1#snapchat-uses-snapstreaks-to-keep-you-hooked-13>; see generally Cathy Becker, *Experts warn parents how Snapchat can hook in teens with streaks*, ABC News (July 27, 2017), <https://abcnews.go.com/Lifestyle/experts-warn-parents-snapchat-hook-teens-streaks/story?id=48778296>.

<sup>173</sup> Caroline Knorr, *How to resist technology addiction*, CNN (Nov. 9, 2017), <https://www.cnn.com/2017/11/09/health/science-of-tech-obsession-partner/index.html>; Jon Brooks, *7 Specific Tactics Social Media Companies Use to Keep You Hooked*, KQED (June 9, 2017), <https://www.kqed.org/futureofyou/397018/7-specific-ways-social-media-companies-have-you-hooked>.

increase the amount of time users spend on Snapchat.

162. Snap also designs photo and video filters and lenses, which are central to Snapchat's function as a photo and video sharing social media platform. Snap designed its filters and lenses in a way to further maximize the amount of time users spend on Snapchat. One way Snap uses its filters to hook young users is by creating temporary filters that impose a sense of urgency to use them before they disappear. Another way Snap designed its filters to increase screen use is by gamification. Many filters include games,<sup>174</sup> creating competition between users by sending each other snaps with scores. Further, Snap tracks data on the most commonly used filters and develops new filters based on this data.<sup>175</sup> And Snap personalizes filters to further entice individuals to use Snapchat more.<sup>176</sup> Snap designs and modifies these filters to maximize the amount of time users spend on Snapchat.

**d. Snapchat's Algorithms Are Manipulative and Harmful**

163. Snap also uses complex algorithms to suggest friends to users and recommend content in order to keep users using Snapchat.

164. Snap notifies users based on an equation Snap uses to determine whether someone should add someone else as a friend on Snapchat. This is known as "Quick Add." By using an algorithm to suggest friends to users, Snapchat increases the odds users will add additional friends, send additional snaps, and spend more time on the app.

165. Snapchat also contains "Discover" and "Spotlight" features that use algorithms to recommend content to users. The Discover feature includes content from

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<sup>174</sup> Josh Constine, *Now Snapchat Has 'Filter Games'*, TechCrunch (Dec. 23, 2016), <https://techcrunch.com/2016/12/23/snapchat-games/>.

<sup>175</sup> *How We Use Your Information*, Snap Inc., <https://snap.com/en-US/privacy/your-information> (last visited Dec. 8, 2022).

<sup>176</sup> *Id.*

news and other media outlets.<sup>177</sup> A user's Discover page is populated by an algorithm and constantly changes depending on how a user interacts with the content.<sup>178</sup> Similarly, the Spotlight feature promotes popular videos from other Snapchat users and is based on an algorithm that determines whether a user has positively or negatively engaged with similar content.<sup>179</sup> Snap programs its algorithms to push content to users that will keep them engaged on Snapchat and, thereby, increase the amount of time users spend on Snapchat, worsening their mental health.

**e. Snap's Conduct in Designing and Operating Its Platform Has Harmed Youth Mental Health**

166. The way in which Snap has designed and operated Snapchat has caused youth to suffer increased anxiety, depression, disordered eating, cyberbullying, and sleep deprivation.

167. Snap knows Snapchat is harming youth because, as alleged above, Snap intentionally designed Snapchat to maximize engagement by preying on the psychology of children through its use of algorithms and other features including Snapstreaks, various trophies and reward systems, quickly disappearing messages, filters, and games.

168. Snap should know that its conduct has negatively affected youth. Snap's conduct has been the subject of inquiries by the United States Senate regarding Snapchat's use "to promote bullying, worsen eating disorders, and help teenagers buy dangerous drugs or engage in reckless behavior."<sup>180</sup> Further, Senators from across the

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<sup>177</sup> Steven Tweedie, *How to Use Snapchat's New 'Discover' Feature*, Bus. Insider (Jan. 27, 2015), <https://www.businessinsider.com/how-to-use-snapchat-discover-feature-2015-1>.

<sup>178</sup> *How We Use Your Information*, Snap Inc., <https://snap.com/en-US/privacy/your-information> (last visited Dec. 8, 2022).

<sup>179</sup> Sara Fischer, *Snapchat launches Spotlight, a TikTok competitor*, Axios (Nov. 23, 2020), <https://www.axios.com/2020/11/23/snapchat-launches-spotlight-tiktok-competitor>; <https://snap.com/en-US/privacy/your-information>.

<sup>180</sup> Bobby Allyn, *4 Takeaways from the Senate child safety hearing with YouTube, Snapchat and TikTok*, Nat'l Pub. Radio (Oct. 26, 2021),

ideological spectrum have introduced bills that would ban many of the features Snapchat uses, including badges and other awards recognizing a user's level of engagement with the platform.<sup>181</sup> Despite these calls for oversight from Congress, Snap has failed to curtail its use of streaks, badges, and other awards that recognize users' level of engagement with Snapchat.

169. Snap also knows or should know of Snapchat's other negative effects on youth because of published research findings. For instance, the Journal of the American Medical Association has recognized that Snapchat's effect on how young people view themselves is so severe, that it named a new disorder, "Snapchat dysmorphia," after the platform.<sup>182</sup> This disorder describes people, usually young women, seeking plastic surgery to make themselves look like the way they do through Snapchat filters.<sup>183</sup> The rationale underlying this disorder is that beauty filters on social media, like Snapchat, create a "sense of unattainable perfection" that is alienating and damaging to a person's self-esteem.<sup>184</sup> One social psychologist summed the effect as "the pressure to present a certain filtered image on social media can certainly play into [depression and anxiety] for younger people who are just developing their identities."<sup>185</sup>

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<https://www.npr.org/2021/10/26/1049267501/snapchat-tiktok-youtube-congress-child-safety-hearing>.

<sup>181</sup> See Abigail Clukey, *Lawmaker Aims To Curb Social Media Addiction With New Bill*, Nat'l Pub. Radio (Aug. 3, 2019),

<https://www.npr.org/2019/08/03/747086462/lawmaker-aims-to-curb-social-media-addiction-with-new-bill>; *Social Media Addiction Reduction Technology Act*, S. 2314, 116th Cong. (2019); *Kids Internet Design and Safety Act*, S. 2918, 117th Cong. (2021).

<sup>182</sup> *'Snapchat Dysmorphia': When People Get Plastic Surgery To Look Like A Social Media Filter*, WBUR (Aug 29, 2018),

<https://www.wbur.org/hereandnow/2018/08/29/snapchat-dysmorphia-plastic-surgery>.

<sup>183</sup> *Id.*

<sup>184</sup> Nathan Smith & Allie Yang, *What happens when lines blur between real and virtual beauty through filters*, ABC News (May 1, 2021),

<https://abcnews.go.com/Technology/lines-blur-real-virtual-beauty-filters/story?id=77427989>.

<sup>185</sup> *Id.*

170. Despite knowing Snapchat harms its young users, Snap continues to update and add features intentionally designed to maximize the amount of time users spend on Snapchat. Snap continues its harmful conduct because its advertising revenue relies on Snapchat's users consuming large volumes of content on its platform.

**3. TikTok Intentionally Marketed to and Designed Its Social Media Platform for Youth Users, Substantially Contributing to the Mental Health Crisis**

**a. TikTok's Platform**

171. TikTok is a social media platform that describes itself as “the leading destination for short-form mobile video.”<sup>186</sup> According to TikTok, it is primarily a platform where users “create and watch short-form videos.”<sup>187</sup>

172. TikTok's predecessor, Musical.ly, launched in 2014 as a place where people could create and share 15-second videos of themselves lip-syncing or dancing to their favorite music.<sup>188</sup>

173. In 2017, ByteDance launched an international version of a similar platform that also enabled users to create and share short lip-syncing videos that it called TikTok.<sup>189</sup>

174. That same year, ByteDance acquired Musical.ly to leverage its young user

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<sup>186</sup> *About: Our Mission*, TikTok, <https://www.tiktok.com/about> (last visited Dec. 8, 2022).

<sup>187</sup> *Protecting Kids Online: Snapchat, TikTok, and YouTube: Hearing Before the Subcomm. On Consumer Protection, Product Safety, and Data Security*, 117 Cong. (2021) (statement of Michael Beckerman, VP and Head of Public Policy, Americas, TikTok).

<sup>188</sup> Biz Carson, *How a failed education startup turned into Musical.ly, the most popular app you've probably never heard of*, Bus. Insider (May, 28, 2016), <https://www.businessinsider.com/what-is-musically-2016-5>.

<sup>189</sup> Paresh Dave, *China's ByteDance scrubs Musical.ly brand in favor of TikTok*, Reuters (Aug. 1, 2018), <https://www.reuters.com/article/us-bytedance-musically/chinas-bytedance-scrubs-musical-ly-brand-in-favor-of-tiktok-idUSKBN1KN0BW>.



base in the United States, of almost 60 million monthly active users.<sup>190</sup>

175. Months later, the apps were merged under the TikTok brand.<sup>191</sup>

176. Since then, TikTok has expanded the length of time for videos from 15-seconds to up to 10 minutes;<sup>192</sup> created a fund that was expected to grow to over \$1 billion within three years to incentivize users to create videos that even more people will watch;<sup>193</sup> and had users debut their own songs, share comedy skits,<sup>194</sup> and “challenge” others to perform an activity.<sup>195</sup>

177. The videos users create on TikTok are only one part of the equation.

178. “[O]ne of the defining features of the TikTok platform,” is its “For You” feed.<sup>196</sup> There, users are served with an unending stream of videos TikTok curates for them based on complex, machine-learning algorithms intended to keep users on its platform. TikTok itself describes the feed as “central to the TikTok experience and where

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<sup>190</sup> Liza Lin & Rolfe Winkler, *Social-Media App Musical.ly Is Acquired for as Much as \$1 Billion; With 60 million monthly users, startup sells to Chinese maker of news app Toutiao*, Wall St. J. (Nov. 10, 2017), <https://www.wsj.com/articles/lip-syncing-app-musical-ly-is-acquired-for-as-much-as-1-billion-1510278123>.

<sup>191</sup> Paresh Dave, *China’s ByteDance scrubs Musical.ly brand in favor of TikTok*, Reuters (Aug. 1, 2018), <https://www.reuters.com/article/us-bytedance-musically/chinas-bytedance-scrubs-musical-ly-brand-in-favor-of-tiktok-idUSKBN1KN0BW>.

<sup>192</sup> Andrew Hutchinson, *TikTok Confirms that 10 Minute Video Uploads are Coming to All Users*, SocialMediaToday (Feb. 28, 2022), <https://www.socialmediatoday.com/news/tiktok-confirms-that-10-minute-video-uploads-are-coming-to-all-users/619535/>.

<sup>193</sup> Vanessa Pappas, *Introducing the \$200M TikTok Creator Fund*, TikTok (July 29, 2021), <https://newsroom.tiktok.com/en-us/introducing-the-200-million-tiktok-creator-fund>.

<sup>194</sup> Joseph Steinberg, *Meet Musical.ly, the Video Social Network Quickly Capturing the Tween and Teen Markets*, Inc. (June 2, 2016), <https://www.inc.com/joseph-steinberg/meet-musically-the-video-social-network-quickly-capturing-the-tween-and-teen-m.html>.

<sup>195</sup> John Herrman, *How TikTok is Rewriting the World*, N.Y. Times (Mar. 10, 2019), <https://www.nytimes.com/2019/03/10/style/what-is-tik-tok.html>.

<sup>196</sup> *How TikTok recommends videos #ForYou*, TikTok (June 18, 2020), <https://newsroom.tiktok.com/en-us/how-tiktok-recommends-videos-for-you>.

most of our users spend their time.”<sup>197</sup> The *New York Times* described it this way:

It’s an algorithmic feed based on videos you’ve interacted with, or even just watched. It never runs out of material. It is not, unless you train it to be, full of people you know, or things you’ve explicitly told it you want to see. It’s full of things that you seem to have demonstrated you want to watch, no matter what you actually say you want to watch.<sup>198</sup>

179. The “For You” feed has quickly garnered TikTok hundreds of millions of users. Since 2018, TikTok has grown from 271 million global users to more than 1 billion global monthly users as of September 2021.<sup>199</sup>

#### **b. TikTok Markets Its Platform to Youth**

180. TikTok, like the other Defendants’ platforms, has built its business plan around advertising revenue, which has boomed. In 2022, TikTok is projected to receive \$11 billion in advertising revenue, over half of which (i.e., \$6 billion) is expected to come from the United States.<sup>200</sup>

181. TikTok, since its inception as Musical.ly, has been designed and developed with youth in mind.

182. Alex Zhu and Louis Yang, the other co-founder of Musical.ly, raised \$250,000 to build an app that experts could use to create short three- to five-minute videos explaining a subject.<sup>201</sup> The day they released the app, Zhu said they knew “[i]t was doomed to be a failure,” because “[i]t wasn’t entertaining, and it didn’t attract

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<sup>197</sup> *Id.*

<sup>198</sup> John Herrman, *How TikTok is Rewriting the World*, N.Y. Times (Mar. 10, 2019), <https://www.nytimes.com/2019/03/10/style/what-is-tik-tok.html>.

<sup>199</sup> Jessica Bursztynsky, *TikTok says 1 billion people use the app each month*, CNBC (Sept. 27, 2021), <https://www.cnbc.com/2021/09/27/tiktok-reaches-1-billion-monthly-users.html>.

<sup>200</sup> Bhanvi Staija, *TikTok’s ad revenue to surpass Twitter and Snapchat combined in 2022*, Reuters (Apr. 11, 2022), <https://www.reuters.com/technology/tiktoks-ad-revenue-surpass-twitter-snapchat-combined-2022-report-2022-04-11/>.

<sup>201</sup> Biz Carson, *How a failed education startup turned into Musical.ly, the most popular app you’ve probably never heard of*, Bus. Insider (May 28, 2016), <https://www.businessinsider.com/what-is-musically-2016-5>.

teens.”<sup>202</sup>

183. According to Zhu, he stumbled upon the idea that would become known as TikTok while observing teens on a train, half of whom were listening to music while the other half took selfies or videos and shared the results with friends.<sup>203</sup> “That’s when Zhu realized he could combine music, videos, and a social network to attract the early-teen demographic.”<sup>204</sup>

184. Zhu and Yang thereafter developed the short-form video app that is now known as TikTok, which commentators have observed “encourages a youthful audience in subtle and obvious ways.”<sup>205</sup>

185. Among the more subtle ways the app was marketed to youth, are its design and content. For example, the Federal Trade Commission (“FTC”) alleged that the app initially centered around a child-oriented activity (i.e., lip syncing); featured music by celebrities that then appealed primarily to teens and tweens, such as Selena Gomez and Ariana Grande; labelled folders with names meant to appeal to youth, such as “Disney” and “school”; included songs in such folders related to Disney television shows and movies, such as “Can You Feel the Love Tonight” from the movie “The Lion King” and “You’ve Got a Friend in Me” from the movie “Toy Story” and songs covering school-related subjects or school-themed television shows and movies.<sup>206</sup>

186. The target demographic was also reflected in the sign-up process. In 2016, the birthdate for those signing up for the app defaulted to the year 2000 (i.e., 16 years

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<sup>202</sup> *Id.*

<sup>203</sup> *Id.*

<sup>204</sup> *Id.*

<sup>205</sup> John Herrman, *Who’s Too Young for an App? Musical.ly Tests the Limits*, N.Y. Times (Sept. 16, 2016), <https://www.nytimes.com/2016/09/17/business/media/a-social-network-frequented-by-children-tests-the-limits-of-online-regulation.html>.

<sup>206</sup> Complaint for Civil Penalties, Permanent Injunction, and Other Equitable Relief (“*Musical.ly Complaint*”) at p. 8, ¶¶ 26–27, *United States v. Musical.ly*, 2:19-cv-01439-ODW-RAO (C.D. Cal. Feb. 27, 2019) Dkt. # 1.

old).<sup>207</sup>

187. TikTok also cultivated a younger demographic in unmistakable, albeit concealed, ways. In 2020, the *Intercept* reported on a document TikTok prepared for its moderators. In the document, TikTok instructs its moderators that videos of “senior people with too many wrinkles” are disqualified for the “For You” feed because that would make “the video . . . much less attractive [and] not worth[] . . . recommend[ing.]”<sup>208</sup>

188. In December 2016, Zhu confirmed the company had actual knowledge that “a lot of the top users are under 13.”<sup>209</sup>

189. The FTC alleged that despite the company’s knowledge of these and a “significant percentage” of other users who were under 13, the company failed to comply with the COPPA.<sup>210</sup>

190. TikTok settled those claims in 2019 by agreeing to pay what was then the largest ever civil penalty under COPPA and to several forms of injunctive relief.<sup>211</sup>

191. In an attempt to come into compliance with the consent decree and COPPA, TikTok made available to users under 13 what it describes as a “limited,

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<sup>207</sup>Melia Robinson, *How to use Musical.ly, the app with 150 million users that teens are obsessed with*, Bus. Insider (Dec. 7, 2016), <https://www.businessinsider.com/how-to-use-musically-app-2016-12>.

<sup>208</sup>Sam Biddle *et al.*, *Invisible Censorship: TikTok Told Moderators to Suppress Posts by “Ugly” People and the Poor to Attract New Users*, *Intercept* (Mar. 15, 2020), <https://theintercept.com/2020/03/16/tiktok-app-moderators-users-discrimination/>.

<sup>209</sup>Jon Russell, *Muscal.ly defends its handling of young users, as it races past 40M MAUs at 8:58–11:12*, *TechCrunch* (Dec. 6, 2016), <https://techcrunch.com/2016/12/06/musically-techcrunch-disrupt-london/>.

<sup>210</sup>See generally *Musical.ly Complaint*, *supra* note 202.

<sup>211</sup>Lesley Fair, *Largest FTC COPPA settlement requires Musical.ly to change its tune*, *FTC* (Feb. 27, 2019), <https://www.ftc.gov/business-guidance/blog/2019/02/largest-ftc-coppa-settlement-requires-musically-change-its-tune>.

separate app experience.”<sup>212</sup> The child version of TikTok restricts users from posting videos through the app. Children can still, however, record and watch videos on TikTok.<sup>213</sup> For that reason, experts fear the app is “designed to fuel [kids’] interest in the grown-up version.”<sup>214</sup>

192. These subtle and obvious ways TikTok markets to and obtained a young userbase are manifestations of Zhu’s views about the importance of user engagement to growing TikTok. Zhu explained the target demographic to the *New York Times*: “[T]eenage culture doesn’t exist” in China because “teens are super busy in school studying for tests, so they don’t have the time and luxury to play social media apps.”<sup>215</sup> By contrast, Zhu describes “[t]eenagers in the U.S. [as] a golden audience.”<sup>216</sup>

193. TikTok’s efforts to attract young users have been successful. *See supra* Section IV.A. Over 66 percent of children ages 13–17 report having used the TikTok app.

**c. TikTok Intentionally Maximizes the Time Users Spend on its Platform**

194. TikTok employs design elements and complex algorithms to simulate variable reward patterns in a flow-inducing stream of short-form videos intended to captivate its user’s attention well after they are satiated.

195. Like the other Defendants’ social media platforms, TikTok developed features that exploit psychological phenomenon such as IVR and reciprocity to maximize the time users spend on its platform.

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<sup>212</sup> Dami Lee, *TikTok stops young users from uploading videos after FTC settlement*, Verge (Feb. 27, 2019), <https://www.theverge.com/2019/2/27/18243510/tiktok-age-young-user-videos-ftc-settlement-13-childrens-privacy-law>.

<sup>213</sup> *Id.*

<sup>214</sup> Leonard Sax, *Is TikTok Dangerous for Teens?*, Inst. Fam. Stud. (Mar. 29, 2022), <https://ifstudies.org/blog/is-tiktok-dangerous-for-teens->.

<sup>215</sup> Paul Mozur, *Chinese Tech Firms Forced to Choose Market: Home or Everywhere Else*, N.Y. Times (Aug. 9, 2016), <https://www.nytimes.com/2016/08/10/technology/china-homegrown-internet-companies-rest-of-the-world.html>.

<sup>216</sup> *Id.*

196. TikTok drives habitual use of its platform using design elements that operate on principles of IVR. For example, TikTok designed its platform to allow users to like and reshare videos. Those features serve as rewards for users who create content on the platform. Receiving a like or reshare indicates that others approve of that user's content and satisfies their natural desire for acceptance.<sup>217</sup> Studies have shown that "likes" activate the reward region of the brain.<sup>218</sup> The release of dopamine in response to likes creates a positive feedback loop.<sup>219</sup> Users will use TikTok—again and again—in hope of another pleasurable experience.<sup>220</sup>

197. TikTok also uses reciprocity to manipulate users to use the platform. TikTok invokes reciprocity through features like "Duet." The Duet feature allows users to post a video side-by-side with a video from another TikTok user. Users use Duet as a way to react to the videos of TikTok content creators. The response is intended to engender a reciprocal response from the creator of the original video.

198. TikTok, like Snapchat, offers video filters, lenses, and music, which are intended to keep users on its platform. Also, like Snapchat, TikTok has gamified its platform through "challenges." These challenges are essentially campaigns in which users compete to perform a specific task. By fostering competition, TikTok incentivizes users to use its platform.

199. TikTok's defining features, its "For You" feed, is a curated, never-ending stream of short-form videos intended to keep users on its platform. In that way, TikTok feeds users beyond the point they are satiated. The ability to scroll ad infinitum, coupled

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<sup>217</sup> See, e.g., Lauren E. Sherman *et al.*, *The Power of the Like in Adolescence: Effects of Peer Influence on Neural and Behavioral Responses to Social Media*, 27(7) *Psych. Sci.* 1027–35 (July 2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5387999/>.

<sup>218</sup> *Id.*

<sup>219</sup> Rasan Burhan & Jalal Moradzadeh, *Neurotransmitter Dopamine (DA) and its Role in the Development of Social Media Addiction*, 11(7) *J. Neurology & Neurophysiology* 507 (2020), <https://www.iomcworld.org/open-access/neurotransmitter-dopamine-da-and-its-role-in-the-development-of-social-media-addiction.pdf>.

<sup>220</sup> *Id.*

with the variable reward pattern of TikTok induces a flow-like state for users that distorts their sense of time.<sup>221</sup> That flow is yet another way TikTok increases the time users spend on its platform.

**d. TikTok’s Algorithms are Manipulative**

200. The first thing a user sees when they open TikTok is the “For You” feed, even if they have never posted anything, followed anyone, or liked a video.<sup>222</sup>

201. The “For You” page presents users with a “stream of videos” TikTok claims are “curated to [each user’s] interests.”<sup>223</sup>

202. According to TikTok, it populates each user’s “For You” feed by “ranking videos based on a combination of factors,” that include, among others, any interests expressed when a user registers a new account, videos a user likes, accounts they follow, hashtags, captions, sounds in a video they watch, and certain device settings, such as their language preferences and where they are located.<sup>224</sup>

203. Critically, some factors weigh heavier than others. To illustrate, TikTok explains that an indicator of interest, such as “whether a user finishes watching a longer video from beginning to end, would receive greater weight than a weak indicator, such as whether the video’s viewer and creator are both in the same country.”<sup>225</sup>

204. TikTok claims it ranks videos in this way because the length of time a user spends watching a video is a “strong indicator of interest[.]”<sup>226</sup>

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<sup>221</sup> Christian Montag *et al.*, *Addictive Features of Social Media/Messenger Platforms and Freemium Games against the Background of Psychological and Economic Theories*, 16(14) Int’l J. Env’t Rsch. & Pub. Health 2612 (July 23, 2019), <https://doi.org/10.3390/ijerph16142612>.

<sup>222</sup> Brian Feldman, *TikTok is Not the Internet’s Eden*, N.Y. Mag. (Mar. 16, 2020), <https://nymag.com/intelligencer/2020/03/tiktok-didnt-want-you-to-see-ugly-or-poor-people-on-its-app.html>.

<sup>223</sup> *How TikTok recommends videos #ForYou*, TikTok (June 18, 2020), <https://newsroom.tiktok.com/en-us/how-tiktok-recommends-videos-for-you>.

<sup>224</sup> *Id.*

<sup>225</sup> *Id.*

<sup>226</sup> *Id.*

205. But Zhu offered a different explanation, he repeatedly told interviewers that he was “focused primarily on increasing the engagement of existing users.”<sup>227</sup> “Even if you have tens of millions of users,” Zhu explained, “you have to keep them *always* engaged.”<sup>228</sup>

206. The decisions TikTok made in programming its algorithms are intended to do just that, as TikTok candidly explained in an internal document titled, “TikTok Algo 101.” The document, which TikTok has confirmed is authentic, “explains frankly that in the pursuit of the company’s ‘ultimate goal’ of adding daily active users, it has chosen to optimize for two closely related metrics in the stream of videos it serves: ‘retention’ — that is, whether a user comes back — and ‘time spent.’”<sup>229</sup>

207. “This system means that watch time is key.”<sup>230</sup> Guillaume Chaslot, the founder of Algo Transparency, who reviewed the document at the request of the *New York Times*, explained that “rather than giving [people] what they really want,” TikTok’s “algorithm tries to get people addicted[.]”<sup>231</sup>

208. Put another way, the algorithm, coupled with the design elements, condition users through reward-based learning processes to facilitate the formation of habit loops that encourage excessive use.

209. The end result is that TikTok uses “a machine-learning system that analyzes each video and tracks user behavior so that it can serve up a continually refined,

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<sup>227</sup> Joseph Steinberg, *Meet Musical.ly, the Video Social Network Quickly Capturing the Tween and Teen Markets*, Inc. (June 2, 2016), <https://www.inc.com/joseph-steinberg/meet-musically-the-video-social-network-quickly-capturing-the-tween-and-teen-m.html>.

<sup>228</sup> Biz Carson, *How a failed education startup turned into Musical.ly, the most popular app you’ve probably never heard of*, Bus. Insider (May 28, 2016), <https://www.businessinsider.com/what-is-musically-2016-5> (emphasis added).

<sup>229</sup> Ben Smith, *How TikTok Reads Your Mind*, N.Y. Times (Dec. 5, 2021), <https://www.nytimes.com/2021/12/05/business/media/tiktok-algorithm.html>.

<sup>230</sup> *Id.*

<sup>231</sup> *Id.*



never-ending stream of TikToks optimized to hold [user's] attention.”<sup>232</sup>

**e. TikTok’s Conduct in Designing and Operating its Platform Has Harmed Youth Mental Health**

210. TikTok’s decision to program its algorithm to prioritize user engagement causes harmful and exploitive content to be amplified to the young market it has cultivated.

211. The Integrity Institute, a nonprofit of engineers, product managers, data scientists, and others, has demonstrated how prioritizing user engagement amplifies misinformation on TikTok (and other platforms).<sup>233</sup> That pattern, the Integrity Institute notes, is “true for a broad range of harms,” such as hate speech and self-harm content, in addition to misinformation.<sup>234</sup>

212. The Integrity Institute’s analysis builds on a premise Mark Zuckerberg described as the “Natural Engagement Pattern.”<sup>235</sup>

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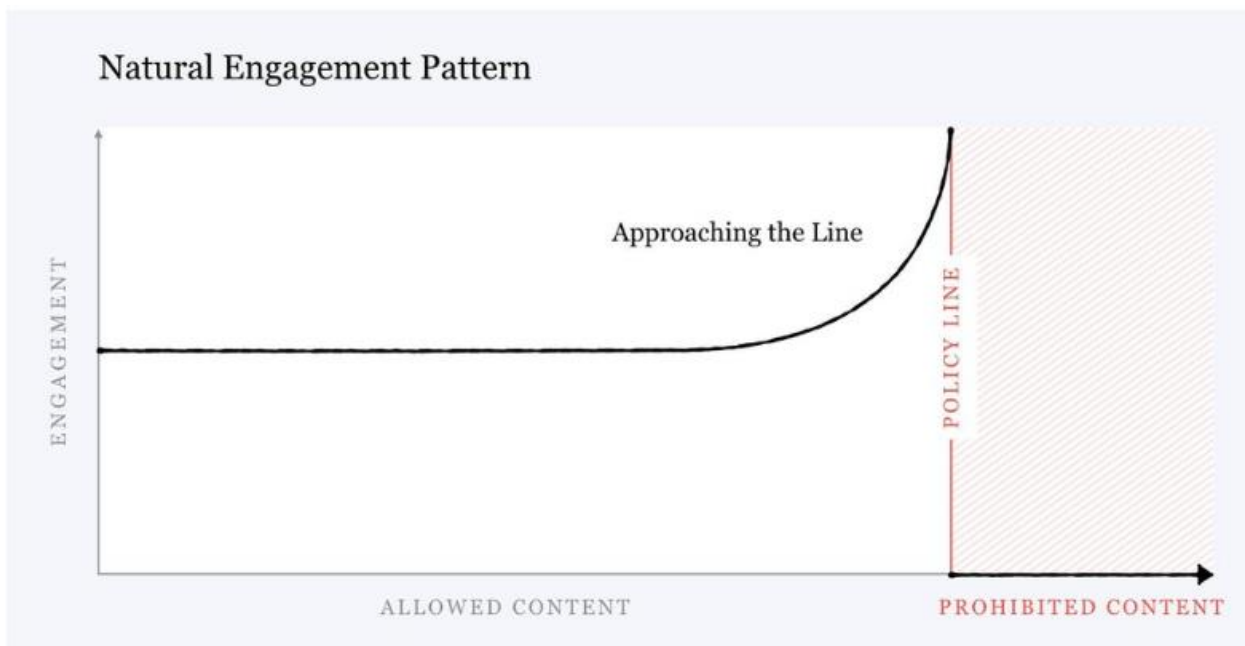
<sup>232</sup> Jia Tolentino, *How TikTok Holds Our Attention*, New Yorker (Sept. 30, 2019), <https://www.newyorker.com/magazine/2019/09/30/how-tiktok-holds-our-attention>.

<sup>233</sup> *Misinformation Amplification Analysis and Tracking Dashboard*, Integrity Inst. (Oct. 13, 2022), <https://integrityinstitute.org/our-ideas/hear-from-our-fellows/misinformation-amplification-tracking-dashboard>; see also Steven Lee Myers, *How Social Media Amplifies Misinformation More Than Information*, N.Y. Times (Oct. 13, 2022), <https://www.nytimes.com/2022/10/13/technology/misinformation-integrity-institute-report.html>.

<sup>234</sup> *Misinformation Amplification Analysis and Tracking Dashboard*, Integrity Inst. (Oct. 13, 2022), <https://integrityinstitute.org/our-ideas/hear-from-our-fellows/misinformation-amplification-tracking-dashboard>.

<sup>235</sup> Mark Zuckerberg, *A Blueprint for Content Governance and Enforcement*, Facebook (May 5, 2021), <https://www.facebook.com/notes/751449002072082/>.

213. This chart shows that as content gets closer and closer to becoming harmful, on average, it gets more engagement.



214. According to Zuckerberg “no matter where we draw the lines for what is allowed, as a piece of content gets close to that line, people will engage with it more on average[.]”<sup>236</sup>

215. This has important implications for platform design, as the Integrity Institute explains:

when platforms use machine learning models to predict user engagement on content, we should expect the predicted engagement to follow the actual engagement. When those predictions are used to rank and recommend content, specifically when a higher predicted engagement score means the content is more likely to be recommended or placed at the top of feeds, then we expect that misinformation will be preferentially distributed and amplified on the platform.<sup>237</sup>

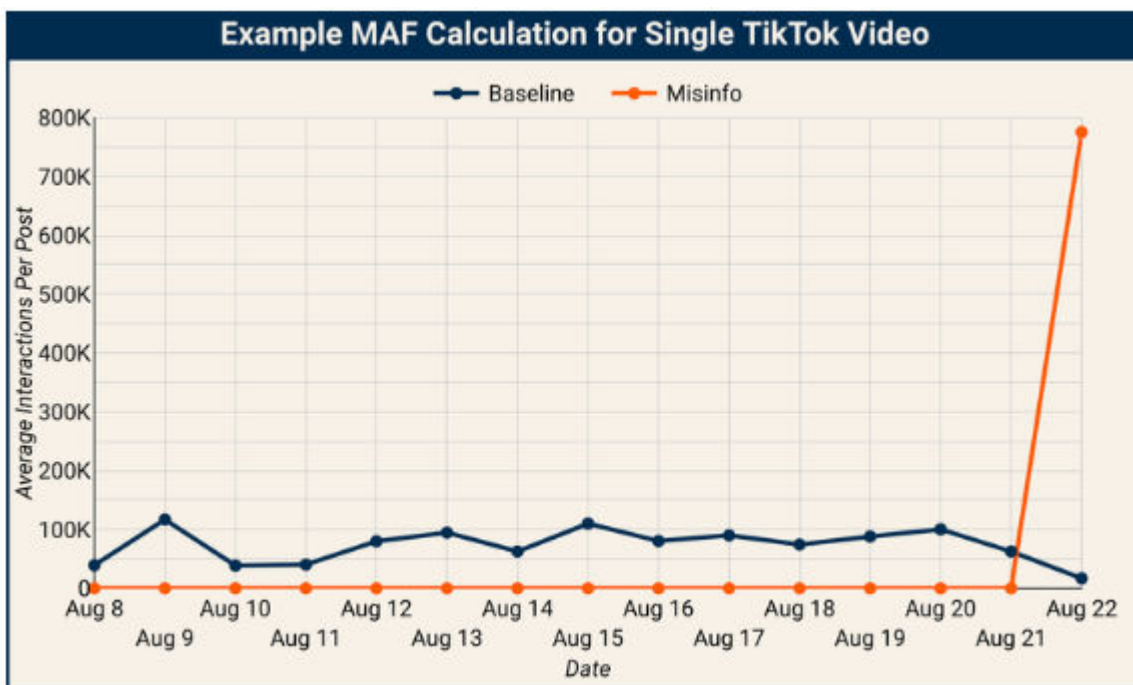
216. Put differently, if you use past engagement to predict future engagement, as TikTok does, you are most likely to populate users “For You” feed with harmful content.

<sup>236</sup> *Id.*

<sup>237</sup> *Misinformation Amplification Analysis and Tracking Dashboard*, Integrity Inst. (Oct. 13, 2022), <https://integrityinstitute.org/our-ideas/hear-from-our-fellows/misinformation-amplification-tracking-dashboard>.

217. The Integrity Institute tested its theory by analyzing a category of harmful content: misinformation. Specifically, the Integrity Institute compared the amount of engagement (e.g., number of views) a post containing misinformation received as compared to prior posts from the same content creator.<sup>238</sup>

218. For example, a TikTok user's historical posts received on average 75,000 views. When that same user posted a false statement (as determined by the International Fact Checking Network), the post received 775,000 views. In this case, TikTok amplified the misinformation 10 times more than this user's typical content.<sup>239</sup>



219. After analyzing many other posts from other users, the Integrity Institute found that TikTok on average amplified misinformation 29 times more than other content.<sup>240</sup>

220. A separate investigation by *NewsGuard* found TikTok's search algorithm similarly amplified misinformation. TikTok's search engine, like its "For You" feed, is a

<sup>238</sup> *Id.*

<sup>239</sup> *Id.*

<sup>240</sup> *Id.*

favorite among youth, with 40 percent preferring it (and Instagram) over Google.<sup>241</sup> Unfortunately, *NewsGuard* found that 1 in 5 of the top 20 TikTok search results on prominent news topics, such as school shootings and COVID vaccines, contain misinformation.<sup>242</sup>

221. Misinformation is just one type of harmful content TikTok amplifies to its young users. Investigations by the *Wall Street Journal* found TikTok inundated young users with videos about depression, self-harm, drugs, and extreme diets, to name a few.

222. In one investigation, the *Wall Street Journal* found TikTok's algorithm quickly pushed users down rabbit holes where they were more likely to encounter harmful content. The *Wall Street Journal* investigated how TikTok's algorithm chose what content to promote to users by having 100 bots scroll through the "For You" feed.<sup>243</sup> Each bot was programmed with interests, such as extreme sports, forestry, dance, astrology, and animals.<sup>244</sup> Those interests were not disclosed in the process of registering their accounts.<sup>245</sup> Rather, the bots revealed their interests through their behaviors, specifically the time they spent watching the videos TikTok recommended to them. Consistent with TikTok's internal "Algo 101" document, the *Wall Street Journal* found that time spent watching videos to be "the most impactful data on [what] TikTok serves you."<sup>246</sup>

223. Over the course of 26 minutes, one bot watched 224 videos, lingering over

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<sup>241</sup> Wanda Pogue, *Move Over Google. TikTok is the Go-To Search Engine for Gen Z*, Adweek (Aug. 4, 2022), <https://www.adweek.com/social-marketing/move-over-google-tiktok-is-the-go-to-search-engine-for-gen-z/>.

<sup>242</sup> *Misinformation Monitor*, NewsGuard (Sept. 2022),

<https://www.newsguardtech.com/misinformation-monitor/september-2022/>.

<sup>243</sup> *Inside TikTok's Algorithm: A WSJ Video Investigation*, Wall St. J. (July 21, 2021), <https://www.wsj.com/articles/tiktok-algorithm-video-investigation-11626877477>.

<sup>244</sup> *Id.*

<sup>245</sup> *Id.*

<sup>246</sup> *Id.*

videos with hashtags for “depression” or “sad.”<sup>247</sup> From then on, 93 percent of the videos TikTok showed this account were about depression or sadness.<sup>248</sup>

224. That is not an outlier. Guillaume Chaslot, a former engineer for Google who worked on the algorithm for YouTube and the founder of Algo Transparency, explained that 90–95 percent of the content users see on TikTok is based on its algorithm.<sup>249</sup>

225. “Even bots with general mainstream interests got pushed to the margin as recommendations got more personalized and narrow.”<sup>250</sup> Deep in these rabbit holes, the *Wall Street Journal* found “users are more likely to encounter potential harmful content.”<sup>251</sup> For example, one video the *Wall Street Journal* encountered encouraged suicide, reading “Just go. Leave. Stop trying. Stop pretending. You know it and so do they. Do Everyone a favor and leave.”<sup>252</sup>

226. Chaslot explained why TikTok feeds users this content:

[T]he algorithm is able to find the piece of content that you’re vulnerable to. That will make you click, that will make you watch, but it doesn’t mean you really like it. And that it’s the content that you enjoy the most. It’s just the content that’s most likely to make you stay on the platform.<sup>253</sup>

227. A follow-up investigation by the *Wall Street Journal* using bots found “that through its powerful algorithms, TikTok can quickly drive minors—among the biggest users of the app—into endless spools of content about sex and drugs.”<sup>254</sup>

228. The bots in this investigation were registered as users aged 13 to 15 and, as

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<sup>247</sup> *Id.*

<sup>248</sup> *Id.*

<sup>249</sup> *Id.*

<sup>250</sup> *Id.*

<sup>251</sup> *Id.*

<sup>252</sup> *Id.*

<sup>253</sup> *Id.*

<sup>254</sup> Rob Barry *et al.*, *How TikTok Serves up Sex and Drug Videos to Minors*, Wall St. J. (Sept. 8, 2021), [https://www.wsj.com/articles/tiktok-algorithm-sex-drugs-minors-11631052944?st=e92pu5734lvc7ta&reflink=desktopwebshare\\_permalink](https://www.wsj.com/articles/tiktok-algorithm-sex-drugs-minors-11631052944?st=e92pu5734lvc7ta&reflink=desktopwebshare_permalink).

before, programmed to demonstrate interest by how long they watched the videos TikTok’s algorithms served them.<sup>255</sup> Videos that did not match their interests, the bots scrolled through without pausing.<sup>256</sup> The bots lingered on videos that matched any of their programmed interests.<sup>257</sup>

229. Every second the bot hesitated or re-watched a video again proved key to what TikTok recommended to the accounts, which the *Wall Street Journal* found was used to “drive users of any age deep into rabbit holes of content[.]”<sup>258</sup>

230. For example, one bot was programmed to pause on videos referencing drugs, among other topics. The first day on the platform, the “account lingered on a video of a young woman walking through the woods with a caption” referencing “stoner girls.”<sup>259</sup> The following day the bot viewed a video of a “marijuana-themed cake.”<sup>260</sup> The “majority of the next thousand videos” TikTok directed at the teenage account “tout[ed] drugs and drug use, including marijuana, psychedelics and prescription medication.”<sup>261</sup>

231. TikTok similarly zeroed in on and narrowed the videos it showed accounts whether the bot was programmed to express interest in drugs, sexual imagery, or a multitude of interests. In the first couple of days, TikTok showed the bots a “high proportion of popular videos.”<sup>262</sup> “But after three days, TikTok began serving a high number of obscure videos.”<sup>263</sup>

232. For example, a bot registered as a 13-year-old was shown a series of popular videos upon signing up.<sup>264</sup> The bot, which was programmed to demonstrate

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<sup>255</sup> *Id.*

<sup>256</sup> *Id.*

<sup>257</sup> *Id.*

<sup>258</sup> *Id.*

<sup>259</sup> *Id.*

<sup>260</sup> *Id.*

<sup>261</sup> *Id.*

<sup>262</sup> *Id.*

<sup>263</sup> *Id.*

<sup>264</sup> *Id.*

interest in sexual text and imagery, also watched sexualized videos. Later, “[i]t experienced one of the most extreme rabbit holes among the *Wall Street Journal*’s accounts. Many videos described how to tie knots for sex, recover from violent sex acts and discussed fantasies about rape.”<sup>265</sup> At one point, “more than 90 percent of [one] account’s video feed was about bondage and sex.”<sup>266</sup>

233. At least 2,800 of the sexualized videos that were shown to the *Wall Street Journal*’s bots were labeled as being for adults only.<sup>267</sup> Yet, TikTok directed these videos to the minor accounts because, as TikTok told the *Wall Street Journal*, it does not “differentiate between videos it serves to adults and minors.”<sup>268</sup>

234. TikTok also directed a concentrated stream of videos at accounts programmed to express interest in a variety of topics. One such account was programmed to linger over hundreds of Japanese film and television cartoons. “In one streak of 150 videos, all but four” of the videos TikTok directed at the account, “featured Japanese animation—many with sexual themes.”<sup>269</sup>

235. The relentless stream of content intended to keep users engaged “can be especially problematic for young people,” because they may lack the capability to stop watching, says David Anderson, a clinical psychologist at the nonprofit mental health care provider, The Child Mind Institute.<sup>270</sup>

236. In a similar investigation, the *Wall Street Journal* found TikTok “flood[ed] teen users with videos of rapid-weight-loss competitions and ways to purge food that health professionals say contribute to a wave of eating-disorder cases spreading across

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<sup>265</sup> *Id.*

<sup>266</sup> *Id.*

<sup>267</sup> *Id.*

<sup>268</sup> *Id.*

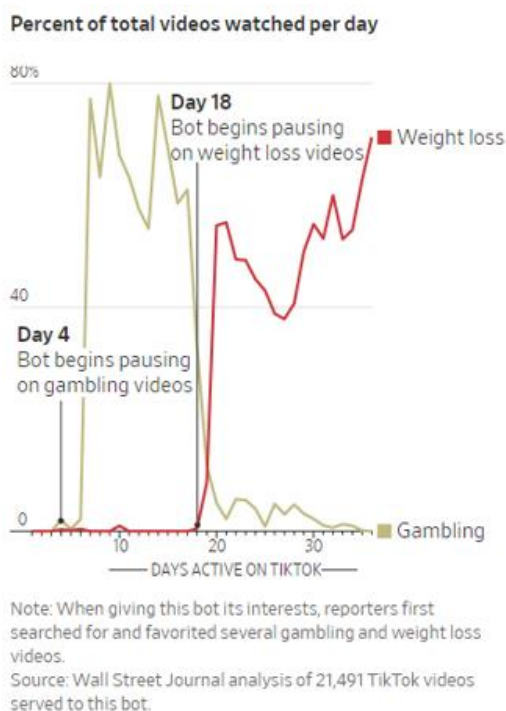
<sup>269</sup> *Id.*

<sup>270</sup> *Id.*

the country.”<sup>271</sup>

237. In this investigation, the *Wall Street Journal* analyzed the tens of thousands of videos TikTok recommended to a dozen bots registered as 13-year-olds. As before, the bots were given interests. Bots scrolled quickly through videos that did not match their interests and lingered on videos that did.<sup>272</sup> The accounts registered as 13-year-olds were programmed at different times to display interests in weight loss, gambling, and alcohol.<sup>273</sup>

238. “TikTok’s algorithm quickly g[a]ve[] users the content they’ll watch, for as long as they’ll watch it.”<sup>274</sup> For example, TikTok streamed gambling videos to a bot registered to a 13-year-old after it first searched for and favorited several such videos.<sup>275</sup>



<sup>271</sup> Tawnell D. Hobbs *et al.*, *The Corpse Bride Diet: How TikTok Inundates Teens with Eating-Disorder Videos*, Wall St. J. (Dec. 17, 2021), <https://www.wsj.com/articles/how-tiktok-inundates-teens-with-eating-disorder-videos-11639754848> (some of the accounts performed searches or sent other, undisclosed signals indicating their preferences).

<sup>272</sup> *Id.*

<sup>273</sup> *Id.*

<sup>274</sup> *Id.*

<sup>275</sup> *Id.*



When the bot began demonstrating interest in weight loss videos, the algorithm adapted quickly, as this chart demonstrates.<sup>276</sup>

239. After the change in programming, weight-loss videos accounted for well over 40 percent of the content TikTok’s algorithm recommended to the user.<sup>277</sup>

240. The other accounts were also flooded with weight-loss videos. Over the course of about 45 days, TikTok inundated the accounts with more than 32,000 such videos, “many promoting fasting, offering tips for quickly burning belly fat and pushing weight-loss detox programs and participation in extreme weight-loss competitions.”<sup>278</sup> Some encouraged purging, eating less than 300 calories a day, consuming nothing but water some days, and other hazardous diets.<sup>279</sup>

241. According to Alyssa Moukheiber, a treatment center dietitian, TikTok’s powerful algorithm and the harmful streams of content it directs at young users can tip them into unhealthy behaviors or trigger a relapse.<sup>280</sup>

242. Unfortunately, it has for the several teenage girls interviewed by the *Wall Street Journal*, who reported developing eating disorders or relapsing after being influenced by the extreme diet videos TikTok promoted to them.<sup>281</sup>

243. They are not alone. Katie Bell, a co-founder of the Healthy Teen Project, “said the majority of her 17 teenage residential patients told her TikTok played a role in their eating disorders.”<sup>282</sup>

244. Others, like Stephanie Zerwas, an associate professor of psychiatry at the University of North Carolina at Chapel Hill, could not recount how many of her young patients told her that “I’ve started falling down this rabbit hole, or I got really into this or

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<sup>276</sup> *Id.*

<sup>277</sup> *Id.*

<sup>278</sup> *Id.*

<sup>279</sup> *Id.*

<sup>280</sup> *Id.*

<sup>281</sup> *Id.*

<sup>282</sup> *Id.*

that influencer on TikTok, and then it started to feel like eating-disorder behavior was normal, that everybody was doing that.”<sup>283</sup>

245. This trend extends nationwide. The National Association of Anorexia Nervosa and Associated Disorders has fielded 50 percent more calls to its hotline since the pandemic began, most of whom it says are from young people or parents on their behalf.<sup>284</sup>

246. Despite the ample evidence that TikTok’s design and operation of its platform harms the tens of millions of youths who use it, TikTok continues to manipulate them into returning to the platform again and again so that it may serve them ads in between the exploitive content it amplifies.

#### **4. YouTube Intentionally Marketed to and Designed Its Social Media Platform for Youth Users, Substantially Contributing to the Mental Health Crisis**

##### **a. The YouTube Platform**

247. YouTube is a platform where users can post, share, view, and comment on videos related to a vast range of topics. The platform became available publicly in December 2005 and was acquired by Google in 2006.

248. YouTube reports that today it has over 2 billion monthly logged-in users.<sup>285</sup> Even more people use YouTube each month because consumers do not have to register an account to view a video on YouTube. As a result, anyone can view most content on YouTube—regardless of age.

249. Users, whether logged in or not, watch *billions of hours of videos every day*.<sup>286</sup>

250. Users with accounts can post their own videos, comment on others, and

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<sup>283</sup> *Id.*

<sup>284</sup> *Id.*

<sup>285</sup> YouTube for Press, YouTube, <https://blog.youtube/press/> (last visited Dec. 8, 2022).

<sup>286</sup> *Id.*

since 2010 express their approval of videos through “likes.”<sup>287</sup>

251. Beginning in 2008 and through today, YouTube has recommended videos to users.<sup>288</sup> Early on, the videos YouTube recommended to users were the most popular videos across the platform.<sup>289</sup> YouTube admits “[n]ot a lot of people watched those videos[,]” at least not based on its recommendation.<sup>290</sup>

252. Since then, YouTube has designed and refined its recommendation system using machine learning algorithms that today take into account a user’s “likes,” time spent watching a video, and other behaviors to tailor its recommendations to each user.<sup>291</sup>

253. YouTube automatically plays those recommendations for a user after they finish watching a video. This feature, known as “autoplay,” was implemented in 2015. YouTube turns the feature on by default, which means videos automatically and continuously play for users unless they turn it off.<sup>292</sup>

254. YouTube purports to disable by default its autoplay feature for users aged 13–17.<sup>293</sup> But, as mentioned above, YouTube does not require users to log in or even have an account to watch videos. For them or anyone who does not self-report an age between 13 and 17, YouTube defaults to automatically playing the videos its algorithm recommends to the user.

#### **b. YouTube Markets Its Platform to Youth**

255. The primary way YouTube makes money is through advertising and made

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<sup>287</sup> Josh Lowensohn, *YouTube’s big redesign goes live to everyone*, CNET (Mar. 31, 2010), <https://www.cnet.com/culture/youtubes-big-redesign-goes-live-to-everyone/>.

<sup>288</sup> Cristos Goodrow, *On YouTube’s recommendation system*, YouTube (Sept. 15, 2021), <https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/>.

<sup>289</sup> *Id.*

<sup>290</sup> *Id.*

<sup>291</sup> *Id.*

<sup>292</sup> Autoplay videos, YouTube Help, <https://support.google.com/youtube/answer/6327615?hl=en#:~:text=For%20users%20aged%2013%2D17,turned%20off%20Autoplay%20for%20you> (last visited Dec. 8, 2022).

<sup>293</sup> *Id.*

\$19 billion in ad revenue in 2021 alone.<sup>294</sup>

256. “In 2012, YouTube concluded that the more people watched, the more ads it could run[.]”<sup>295</sup> “So YouTube . . . set a company-wide objective to reach one billion hours of viewing a day[.]”<sup>296</sup>

257. “[T]he best way to keep eyes on the site,” YouTube realized, was “recommending videos, alongside a clip or after one was finished.”<sup>297</sup> That is what led to the development of its recommendation algorithm and autoplay feature described above. *See supra* Section IV.D.4.a.

258. YouTube has long known youth use its platforms in greater proportion than older demographics.

259. Yet, YouTube has not implemented even rudimentary protocols to verify the age of users. Anyone can watch a video on YouTube without registering an account or reporting their age.

260. Instead, YouTube leveraged its popularity among youth to increase its revenue from advertisements by marketing its platform to popular brands of children’s products. For example, Google pitched Mattel, the maker of Barbie and other popular kids’ toys, by telling its executives that “YouTube is today’s leader in reaching children age 6–11 against top TV channels.”<sup>298</sup> When presenting to Hasbro, the maker of Play-Doh, My Little Pony, and other kids’ toys, Google touted that “YouTube was

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<sup>294</sup> Alphabet Inc., Annual Report, Form 10-k at 60 (2021), <https://www.sec.gov/ix?doc=/Archives/edgar/data/1652044/000165204422000019/google-20211231.htm>.

<sup>295</sup> Mark Bergen, *YouTube Executive Ignores Warnings, Letting Toxic Videos Run Rampant*, Bloomberg (Apr. 2, 2019), <https://www.bloomberg.com/news/features/2019-04-02/youtube-executives-ignored-warnings-letting-toxic-videos-run-rampant?leadSource=verify%20wall>.

<sup>296</sup> *Id.*

<sup>297</sup> *Id.*

<sup>298</sup> Complaint for Permanent Injunction, Civil Penalties, and Other Equitable Relief, Exhibit A, *FTC v. Google LLC et al.*, No. 1-19-cv-02642-BAH (D.D.C. Sept. 4, 2019), Dkt. # 1-1.

unanimously voted as the favorite website for kids 2-12,” and that “93% of tweens visit YouTube to watch videos.”<sup>299</sup> In a different presentation to Hasbro, YouTube was referred to as “[t]he new ‘Saturday Morning Cartoons,’” and claimed that YouTube was the “#1 website regularly visited by kids” and “the #1 source where children discover new toys + games.”<sup>300</sup>

261. In addition to turning a blind eye towards underage users of its platform, YouTube developed and marketed a version of YouTube specifically for children under the age of 13.

262. YouTube’s efforts to attract young users have been successful. *See supra* Section IV.A. A vast majority, 95 percent, of children ages 13–17 have used YouTube.<sup>301</sup>

**c. YouTube Intentionally Maximizes the Time Users Spend on its Platform**

263. Google designed YouTube to maximize user engagement, predominantly through the amount of time users spend watching videos. To that end, Google employs design elements and complex algorithms to create a never-ending stream of videos intended to grip user’s attention.

264. Like the other Defendants’ social media platforms, Google developed features that exploit psychological phenomenon such as IVR to maximize the time users spend on YouTube.

265. YouTube uses design elements that operate on principles of IVR to drive both YouTube content creators and YouTube viewers into habitual, excessive use. Google designed YouTube to allow users to like, comment, and share videos and to subscribe to content creator’s channels. These features serve as rewards for users who create and upload videos to YouTube. As described above, receiving a like indicates

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<sup>299</sup> *Id.* Exhibit B.

<sup>300</sup> *Id.* Exhibit C.

<sup>301</sup> *Id.*

others' approval and activates the reward region of the brain.<sup>302</sup> The use of likes, therefore, encourages users to use YouTube over and over, seeking future pleasurable experiences.

266. YouTube also uses IVR to encourage users to view others content. One of the ways Google employs IVR into YouTube's design is through subscriber push notifications and emails, which are designed to prompt users to watch YouTube content and encourages excessive use of the platform. When a user "subscribes" to another user's channel, they receive notifications every time that user uploads new content, prompting them to open YouTube and watch the video.<sup>303</sup>

267. One of YouTube's defining features is its panel of recommended videos. YouTube recommends videos to users on both the YouTube home page and on every individual video page in an "Up Next" panel.<sup>304</sup> This list automatically populates next to the video a user is currently watching. This recommended video list is a never-ending feed of videos intended to keep users on the app watching videos without having to affirmatively click or search for other videos. This constant video stream, comprised of videos recommended by YouTube's algorithms, is the primary way Google increases the time users spend on YouTube.

**d. YouTube's Algorithms are Manipulative**

268. Google uses algorithms throughout YouTube to recommend videos to users. These algorithms select videos that populate the YouTube homepage, rank results in user searches, and suggest videos for viewers to watch next. These algorithms are

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<sup>302</sup> See, e.g., Lauren E. Sherman *et al.*, *The Power of the Like in Adolescence: Effects of Peer Influence on Neural and Behavioral Responses to Social Media*, 27(7) Psych. Sci. 1027–35 (July 2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5387999/>.

<sup>303</sup> *Manage YouTube Notifications*, YouTube, <https://support.google.com/youtube/answer/3382248?hl=en&co=GENIE.Platform%3Desktop> (last visited Dec. 8, 2022).

<sup>304</sup> *Recommended Videos*, YouTube, <https://www.youtube.com/howyoutubeworks/product-features/recommendations/> (last visited Dec. 8, 2022).

manipulative by design and increase the amount of time users spend on YouTube.

269. Google began building the YouTube recommendation system in 2008.<sup>305</sup> When Google initially developed its recommendation algorithms, the end goal was to maximize the amount of time users spend watching YouTube videos. A YouTube spokesperson admitted as much, saying YouTube’s recommendation system was initially set up to “optimize” the amount of time users watch videos.<sup>306</sup>

270. Former YouTube engineer Guillame Chaslot has also stated that when he worked for YouTube designing its recommendation algorithm, the priority was to keep viewers on the site for as long as possible to maximize “watch time.”<sup>307</sup> Chaslot further stated that “[i]ncreasing users’ watch time is good for YouTube’s business model” because the more people watch videos, the more ads they see and YouTube’s advertising revenue increases.<sup>308</sup>

271. Early on, one of the primary metrics behind YouTube’s recommendation algorithm was clicks. As YouTube describes, “[c]licking on a video provides a strong indication that you will also find it satisfying.”<sup>309</sup> But as YouTube learned, clicking on a video does not mean a user actually watched it. Thus, in 2012, YouTube also started tracking watch time—the amount of time a user spends watching a video.<sup>310</sup> YouTube

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<sup>305</sup> Cristos Goodrow, *On YouTube’s recommendation system*, YouTube (Sept. 15, 2021), <https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/>.

<sup>306</sup> Ben Popken, *As algorithms take over, YouTube’s recommendations highlight a human problem*, NBC (Apr. 19, 2018), <https://www.nbcnews.com/tech/social-media/algorithms-take-over-youtube-s-recommendations-highlight-human-problem-n867596>.

<sup>307</sup> William Turton, *How YouTube’s algorithm prioritizes conspiracy theories*, Vice (Mar. 5, 2018), <https://www.vice.com/en/article/d3w9ja/how-youtubes-algorithm-prioritizes-conspiracy-theories>.

<sup>308</sup> Jesselyn Cook & Sebastian Murdock, *YouTube is a Pedophile’s Paradise*, Huffington Post (Mar. 20, 2020), [https://www.huffpost.com/entry/youtube-pedophile-paradise\\_n\\_5e5d79d1c5b6732f50e6b4db](https://www.huffpost.com/entry/youtube-pedophile-paradise_n_5e5d79d1c5b6732f50e6b4db).

<sup>309</sup> Cristos Goodrow, *On YouTube’s Recommendation System*, YouTube (Sept. 15, 2021), <https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/>.

<sup>310</sup> *Id.*

made this switch to keep people watching for as long as possible.<sup>311</sup> In YouTube’s own words, this switch was successful. “These changes have so far proved very positive -- primarily less clicking, more watching. We saw the amount of time viewers spend watching videos across the site increase immediately[.]”<sup>312</sup> And in 2016, YouTube started measuring “valued watchtime” via user surveys to ensure that viewers are satisfied with their time spent watching videos on YouTube.<sup>313</sup> All of these changes to YouTube’s algorithms were made to ensure that users spend more time watching videos and ads.

272. YouTube’s current recommendation algorithm is based on deep-learning neural networks that retune its recommendations based on the data fed into it.<sup>314</sup> While this algorithm is incredibly complex, its process can be broken down into two general steps. First, the algorithm compiles a shortlist of several hundred videos by finding videos that match the topic and other features of the video a user is currently watching.<sup>315</sup> Then the algorithm ranks the list according to the user’s preferences, which the algorithm learns by tracking a user’s clicks, likes, and other interactions.<sup>316</sup> In short, the algorithms

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<sup>311</sup> Dave Davies, *How YouTube became one of the planet’s most influential media businesses*, NPR (Sept. 8, 2022), <https://www.npr.org/2022/09/08/1121703368/how-youtube-became-one-of-the-planets-most-influential-media-businesses>.

<sup>312</sup> Eric Meyerson, *YouTube Now: Why We Focus on Watch Time*, YouTube (Aug. 10, 2012), <https://blog.youtube/news-and-events/youtube-now-why-we-focus-on-watch-time/>.

<sup>313</sup> Cristos Goodrow, *On YouTube’s recommendation system*, YouTube (Sept. 15, 2021), <https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/>.

<sup>314</sup> Alexis C. Madrigal, *How YouTube’s Algorithm Really Works*, Atl. (Nov. 8, 2018), <https://www.theatlantic.com/technology/archive/2018/11/how-youtubes-algorithm-really-works/575212/>; Paul Covington *et al.*, *Deep Neural Networks for YouTube Recommendations*, Google (2016), <https://storage.googleapis.com/pub-tools-public-publication-data/pdf/45530.pdf>.

<sup>315</sup> Karen Hao, *YouTube is experimenting with ways to make its algorithm even more addictive*, MIT Tech. Rev. (Sept. 27, 2019), <https://www.technologyreview.com/2019/09/27/132829/youtube-algorithm-gets-more-addictive/>; Paul Covington *et al.*, *Deep Neural Networks for YouTube Recommendations*, Google (2016), <https://storage.googleapis.com/pub-tools-public-publication-data/pdf/45530.pdf>.

<sup>316</sup> *Id.*



track and measure a user's previous viewing habits and then finds and recommends other videos the algorithm thinks will hold the consumer's attention.

273. YouTube's recommendation system "is constantly evolving, learning every day from over 80 billion pieces of information."<sup>317</sup> Some of the information the recommendation algorithm relies on to deliver recommended videos to users includes users' watch and search history, channel subscriptions, clicks, watch time, survey responses, shares, likes, dislikes, users' location (country) and the time of day.<sup>318</sup>

274. The recommendation algorithm can determine what "signals" or factors are more important to individual users.<sup>319</sup> For example, if a user shares every video they watch, including videos the user gives a low rating, the algorithm learns not to heavily factor the user's shares when recommending content.<sup>320</sup> Thus, the recommendation algorithm "develops dynamically" to individual user's viewing habits and makes highly specific recommendations to keep individual users watching videos.<sup>321</sup>

275. In addition to the algorithm's self-learning, Google engineers consistently update YouTube's recommendation and ranking algorithms, making several updates every month, according to YouTube Chief Product Officer Neal Mohan.<sup>322</sup> The end goal is to increase the amount of time users spend watching content on YouTube.

276. Because Google has designed and refined its algorithms to be manipulative,

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<sup>317</sup> Cristos Goodrow, *On YouTube's Recommendation System*, YouTube (Sept. 15, 2021), <https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/>.

<sup>318</sup> *Recommended Videos*, YouTube, <https://www.youtube.com/howyoutubeworks/product-features/recommendations/#signals-used-to-recommend-content> (last visited Dec. 8, 2022).

<sup>319</sup> *Id.*

<sup>320</sup> *Id.*

<sup>321</sup> *Id.*

<sup>322</sup> Nilay Patel, *YouTube Chief Product Officer Neal Mohan on The Algorithm, Monetization, and the Future for Creators*, Verge (Aug. 3, 2021), <https://www.theverge.com/22606296/youtube-shorts-fund-neal-mohan-decoder-interview>.

these algorithms are incredibly successful at getting users to view content based on the algorithm's recommendation. Mohan stated in 2018 that YouTube's AI-driven recommendations are responsible for 70 percent of the time users spend on YouTube.<sup>323</sup> In other words, 70 percent of all YouTube content that users watch was recommended to users by YouTube's algorithms as opposed to users purposely searching for and identifying the content they watch.

277. Mohan also stated that recommendations keep mobile device users watching YouTube for more than 60 minutes at a time on average.<sup>324</sup>

278. Given that people watch more than one billion hours of YouTube videos daily,<sup>325</sup> YouTube's recommendation algorithms are responsible for hundreds of millions of hours that users spend watching videos on YouTube.

**e. YouTube's Conduct in Designing and Operating its Platform Has Harmed Youth Mental Health**

279. By designing YouTube's algorithms to prioritize and maximize the amount of time users spend watching videos, Google has harmed youth mental health. In particular, YouTube has harmed youth mental health by recommending content to youth through its algorithms.

280. YouTube's algorithms push its young users down rabbit holes where they are likely to encounter content that is violent, sexual, or encourages self-harm, among other types of harmful content.

281. Research by the Tech Transparency Project ("TTP") shows that YouTube Kids fed children content that involved drug culture, guns, and beauty and diet tips that

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<sup>323</sup> Joan E. Solsman, *YouTube's AI is the puppet master over most of what you watch*, CNET (Jan. 20, 2018), <https://www.cnet.com/tech/services-and-software/youtube-ces-2018-neal-mohan/>.

<sup>324</sup> *Id.*

<sup>325</sup> Shira Ovide, *The YouTube Rabbit Hole is Nuanced*, N.Y. Times (Apr. 21, 2022), <https://www.nytimes.com/2022/04/21/technology/youtube-rabbit-hole.html>.

could lead to harmful body image issues.<sup>326</sup> Among the videos TTP found were step-by-step instructions on how to conceal a gun, guides on how to bleach one's face at home, and workout videos emphasizing the importance of burning calories and telling kids to "[w]iggle your jiggle."<sup>327</sup> This research shows that YouTube Kids not only lets inappropriate content slip through its algorithmic filters, but actively directed the content to kids through its recommendation engine.

282. Similar examples abound. Amanda Kloer, a campaign director with the child safety group ParentsTogether, spent an hour on her child's YouTube Kids profile and found videos "encouraging kids how to make their shirts sexier, a video in which a little boy pranks a girl over her weight, and a video in which an animated dog pulls objects out of an unconscious animated hippo's butt."<sup>328</sup> Another parent recounted that YouTube Kids' autoplay function led her 6-year-old daughter to an animated video that encouraged suicide.<sup>329</sup>

283. Other youth are fed content by YouTube's algorithms that encourages self-harm. As reported by PBS Newshour, a middle-schooler named Olivia compulsively watched YouTube videos every day after she came home from school.<sup>330</sup> Over time she became depressed and started searching for videos on how to commit suicide. Similar

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<sup>326</sup> Alex Hern, *YouTube Kids shows videos promoting drug culture and firearms to toddlers*, Guardian (May 5, 2022), <https://www.theguardian.com/technology/2022/may/05/youtube-kids-shows-videos-promoting-drug-culture-firearms-toddlers>.

<sup>327</sup> *Guns, Drugs, and Skin Bleaching: YouTube Kids Poses Risks to Children*, Tech Transparency Project (May 5, 2022), <https://www.techtransparencyproject.org/articles/guns-drugs-and-skin-bleaching-youtube-kids-still-poses-risks-children>.

<sup>328</sup> Rebecca Heilweil, *YouTube's kids app has a rabbit hole problem*, Vox (May 12, 2021), <https://www.vox.com/recode/22412232/youtube-kids-autoplay>.

<sup>329</sup> *Id.*

<sup>330</sup> Lesley McClurg, *After compulsively watching YouTube, teenage girl lands in rehab for 'digital addiction'*, PBS (May 16, 2017), <https://www.pbs.org/newshour/health/compulsively-watching-youtube-teenage-girl-lands-rehab-digital-addiction>.

videos then gave her the idea of overdosing. Weeks later she was in the hospital after “downing a bottle of Tylenol.”<sup>331</sup> Ultimately, she was admitted into rehab for digital addiction because of her compulsive YouTube watching.<sup>332</sup>

284. According to the Pew Research Center, 46 percent of parents say their child has encountered inappropriate videos on YouTube.<sup>333</sup> And children are not encountering these videos on their own volition. Rather, they are being fed harmful and inappropriate videos through YouTube’s algorithms. Again, YouTube’s AI-driven recommendations are responsible for 70 percent of the time users spend on YouTube.<sup>334</sup>

285. Other reports have also found that YouTube’s recommendation algorithm suggests a wide array of harmful content, including videos that feature misinformation, violence, and hate speech, along with other content that violates YouTube’s policies.<sup>335</sup> A 2021 crowdsourced investigation from the Mozilla Foundation involving 37,000 YouTube users revealed that 71 percent of all reported negative user experiences came from videos recommended by YouTube to users.<sup>336</sup> And users were 40 percent more likely to report a negative experience with a video recommended by YouTube’s algorithm than with a video they searched for.<sup>337</sup>

286. The inappropriate and disturbing content YouTube’s algorithms expose children to have adverse effects on mental health. Mental health experts have warned that

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<sup>331</sup> *Id.*

<sup>332</sup> *Id.*

<sup>333</sup> Brooke Auxier *et al.*, *Parenting Children in The Age of Screens*, Pew Rsch. Ctr. (July 28, 2020), <https://www.pewresearch.org/internet/2020/07/28/parental-views-about-youtube/>.

<sup>334</sup> Joan E. Solsman, *YouTube’s AI is the puppet master over most of what you watch*, CNET (Jan. 20, 2018), <https://www.cnet.com/tech/services-and-software/youtube-ces-2018-neal-mohan/>.

<sup>335</sup> Brandy Zadrozny, *YouTube’s recommendations still push harmful videos, crowdsourced study finds*, NBC News (July 17, 2021), <https://www.nbcnews.com/tech/tech-news/youtubes-recommendations-still-push-harmful-videos-crowdsourced-study-rcna1355>.

<sup>336</sup> *Id.*

<sup>337</sup> *Id.*

YouTube is a growing source of anxiety and inappropriate sexual behavior among kids under the age of 13.<sup>338</sup>

287. Further the harmful content YouTube’s algorithms expose children to harm brain development. “Children who repeatedly experience stressful and/or fearful emotions may under develop parts of their brain’s prefrontal cortex and frontal lobe, the parts of the brain responsible for executive functions, like making conscious choices and planning ahead,” according to “Donna Volpitta, Ed.D., founder of The Center for Resilient Leadership.”<sup>339</sup>

288. Even though much of the content YouTube’s algorithms feed to youth is harmful, it triggers chemical reactions that encourage youth to spend more time watching videos on YouTube. According to Dr. Volpitta, watching “fear-inducing videos cause the brain to receive a small amount of dopamine,” which acts as a reward and creates a desire to do something over and over.<sup>340</sup> This dopaminergic response is in addition to the reward stimulus YouTube provides users through IVR.

289. Mental health professionals across the country have seen an increase in children experiencing mental health issues because of YouTube. Natasha Daniels, a child psychotherapist in Arizona, has said she has seen a rise in cases of children suffering from anxiety because of videos they watched on YouTube.<sup>341</sup> Because of their anxiety, these children “exhibit loss of appetite, sleeplessness, crying fits, and fear.”<sup>342</sup>

290. In addition to causing anxiety, watching YouTube is also associated with insufficient sleep.<sup>343</sup> In one study on the effect of app use and sleep, YouTube was the

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<sup>338</sup> Josephine Bila, *YouTube’s dark side could be affecting your child’s mental health*, CNBC (Feb. 13, 2018), <https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-in-young-children.html>.

<sup>339</sup> *Id.*

<sup>340</sup> *Id.*

<sup>341</sup> *Id.*

<sup>342</sup> *Id.*

<sup>343</sup> Meg Pillion *et al.*, *What’s ‘app’-ning to adolescent sleep? Links between device, app use, and sleep outcomes*, 100 *Sleep Med.* 174–82 (Dec. 2022),

only app consistently associated with negative sleep outcomes.<sup>344</sup> For every 15 minutes teens spent watching YouTube, they had a 24 percent greater chance of getting fewer than seven hours of sleep.<sup>345</sup> YouTube is particularly problematic on this front because of YouTube’s recommendation and autoplay feature make it “so easy to finish one video” and watch the next, said Dr. Alon Avidan, director of the UCLA Sleep Disorders Center.<sup>346</sup> In turn, insufficient sleep is associated with poor health outcomes.<sup>347</sup> Thus, YouTube exacerbates an array of youth mental health issues by contributing to sleep deprivation.

291. Despite the vast evidence that YouTube’s design and algorithms harms millions of youths, Google continues to manipulate them into staying on the platform and watching more and more videos so that it can increase its ad revenue.

#### **E. The Effect of Social Media Use on Schools**

292. School districts are uniquely harmed by the current youth mental health crisis. This is because schools are one of the main providers for mental health services for school-aged children.<sup>348</sup> Indeed, over 3.1 million children ages 12–17 received mental health services through an education setting in 2020, more than any other non-specialty mental health service setting.<sup>349</sup>

293. Most schools offer mental health services to students. In the 2021–22

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<https://www.sciencedirect.com/science/article/abs/pii/S1389945722010991?via%3Dihub>.

<sup>344</sup> *Id.*

<sup>345</sup> *Id.*

<sup>346</sup> Cara Murez, *One App is Especially Bad for Teens’ Sleep*, U.S. News (Sept. 13, 2022), <https://www.usnews.com/news/health-news/articles/2022-09-13/one-app-is-especially-bad-for-teens-sleep>.

<sup>347</sup> Jessica C. Levenson *et al.*, *The Association Between Social Media Use and Sleep Disturbance Among Young Adults*, 85 *Preventive Med.* 36–41 (Apr. 2016), <https://www.sciencedirect.com/science/article/abs/pii/S0091743516000025>.

<sup>348</sup> *National Survey on Drug Use and Health*, SAMHSA (2019 & 1st & 4th Qs. 2020), <https://www.samhsa.gov/data/report/2020-nsduh-detailed-tables>.

<sup>349</sup> *Id.*

school year, 96 percent of public schools reported offering at least one type of mental health service to their students.<sup>350</sup> But 88 percent of public schools did not strongly agree that they could effectively provide mental health services to all students in need.<sup>351</sup> The most common barriers to providing effective mental health services are (1) insufficient number of mental health professionals; (2) inadequate access to licensed mental health professionals; and (3) inadequate funding.<sup>352</sup> Student opinions also reflect that schools are unable to provide adequate mental health services. Less than a quarter of students in grades 6–12 report accessing counseling or psychological services when they are upset, stressed, or having a problem.<sup>353</sup> And of the students who access mental health services, only 41 percent of middle schoolers and 36 percent of high schoolers are satisfied with the services they receive.<sup>354</sup>

294. In part, schools are struggling to provide adequate mental health services because of the increase in students seeking these services. More than two-thirds of public schools reported an increase in the percent of students seeking mental health services from school since the start of the pandemic.<sup>355</sup>

295. During this same period, adolescents increased their social media use, also raising levels of excessive and problematic use of digital media.<sup>356</sup> And these higher rates

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<sup>350</sup> *Roughly Half of Public Schools Report That They Can Effectively Provide Mental Health Services to All Students In Need*, Nat'l Ctr. Educ. Stat. (May 31, 2022), [https://nces.ed.gov/whatsnew/press\\_releases/05\\_31\\_2022\\_2.asp](https://nces.ed.gov/whatsnew/press_releases/05_31_2022_2.asp).

<sup>351</sup> *Id.*

<sup>352</sup> *Id.*

<sup>353</sup> *Insights From the Student Experience, Part I: Emotional and Mental Health at 2*, YouthTruth (2022), [https://youthtruthsurvey.org/wp-content/uploads/2022/10/YouthTruth\\_EMH\\_102622.pdf](https://youthtruthsurvey.org/wp-content/uploads/2022/10/YouthTruth_EMH_102622.pdf).

<sup>354</sup> *Id.*

<sup>355</sup> *Roughly Half of Public Schools Report That They Can Effectively Provide Mental Health Services to All Students In Need*, Nat'l Ctr. Educ. Stat. (May 31, 2022), [https://nces.ed.gov/whatsnew/press\\_releases/05\\_31\\_2022\\_2.asp](https://nces.ed.gov/whatsnew/press_releases/05_31_2022_2.asp).

<sup>356</sup> Laura Marciano *et al.*, *Digital Media Use and Adolescents' Mental Health During the Covid-19 Pandemic: A Systematic Review and Meta-Analysis*, *Frontiers Pub. Health* (Feb. 2022), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8848548/>.

of social media use are related to higher “ill-being.”<sup>357</sup> Thus, the increase in adolescent social media use during the pandemic has caused an increase in adolescents experiencing mental health problems.

296. That relationship is reflected in reports from public schools. Over 75 percent of public schools reported an increase in staff expressing concerns about student depression, anxiety, and other disturbances since the start of the pandemic.<sup>358</sup> Students receiving mental health services in educational settings predominately do so because they “[f]elt depressed,” “[t]hought about killing [themselves] or tried to” or “[f]elt very afraid and tense.”<sup>359</sup>

297. Anxiety disorders are also up, affecting 31.9 percent of adolescents between 13 and 18 years old.<sup>360</sup> “Research shows that untreated teenagers with anxiety disorders are at higher risk to perform poorly in school, miss out on important social experiences, and engage in substance abuse.”<sup>361</sup>

298. Schools are struggling not only to provide students with mental health services but also to deliver an adequate education because of the youth mental health crisis. Students in grades 6–12 identify depression, stress, and anxiety as the most prevalent obstacles to learning.<sup>362</sup> Most middle school and high school students also fail

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<sup>357</sup> *Id.*

<sup>358</sup> *Roughly Half of Public Schools Report That They Can Effectively Provide Mental Health Services to All Students In Need*, Nat’l Ctr. Educ. Stat. (May 31, 2022), [https://nces.ed.gov/whatsnew/press\\_releases/05\\_31\\_2022\\_2.asp](https://nces.ed.gov/whatsnew/press_releases/05_31_2022_2.asp).

<sup>359</sup> Rachel N. Lipari *et al.*, *Adolescent Mental Health Service Use and Reasons for Using Services in Specialty, Educational, and General Medical Settings*, SAMHSA (May 5, 2016), [https://www.samhsa.gov/data/sites/default/files/report\\_1973/ShortReport-1973.html#:~:text=The percent20Substance percent20Abuse percent20and percent20Mental,273 percent20TALK percent20\(8255\)](https://www.samhsa.gov/data/sites/default/files/report_1973/ShortReport-1973.html#:~:text=The percent20Substance percent20Abuse percent20and percent20Mental,273 percent20TALK percent20(8255)).

<sup>360</sup> *Anxiety Disorders: Facts and Statistics*, Anxiety & Depression Ass’n Am., <https://adaa.org/understanding-anxiety/facts-statistics> (last visited Dec. 8, 2022).

<sup>361</sup> *Id.*

<sup>362</sup> *Insights From the Student Experience, Part I: Emotional and Mental Health* at 2–3, YouthTruth (2022), [https://youthtruthsurvey.org/wp-content/uploads/2022/10/YouthTruth\\_EMH\\_102622.pdf](https://youthtruthsurvey.org/wp-content/uploads/2022/10/YouthTruth_EMH_102622.pdf).



to get enough sleep on school nights, which contributes to poor academic performance.<sup>363</sup> These negative mental health outcomes are also the most common symptoms of excessive social media use.

299. The youth mental health crisis has also caused a wide range of other behavioral issues among students that interfere with schools' ability to teach. In 2022, 61 percent of public schools saw an increase in classroom disruptions from student misconduct compared to school years before the pandemic.<sup>364</sup> Fifty-eight percent of public schools also saw an increase in rowdiness outside of the classroom, 68 percent saw increases in tardiness, 27 percent saw increases in students skipping classes, 55 percent saw increases in the use of electronic devices when not permitted, 37 percent saw an increase in bullying, 39 percent saw an increase in physical fights between students, and 46 percent saw an increase in threats of fights between students.<sup>365</sup>

300. Further exacerbating school's struggle to teach is the fact students are not showing up to school. Indeed, student absenteeism has greatly increased. In the 2021–22 school year, 39 percent of public schools experienced an increase in chronic student absenteeism compared to the 2020–21 school year, and 72 percent of public schools saw increased chronic student absenteeism compared to school years before the pandemic.<sup>366</sup> Following suit, vandalism has increased in 2022, with 36 percent of public schools reporting increased acts of student vandalism on school property.<sup>367</sup>

301. School districts have borne increased costs and expenses in response to the youth mental health crisis. These costs include:

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<sup>363</sup> Anne G. Wheaton *et al.*, *Short Sleep Duration Among Middle School and High School Students-United States, 2015*, 67(3) *Morbidity & Mortality Wkly. Rpt.* 85–90 (Jan. 26, 2018), <http://dx.doi.org/10.15585/mmwr.mm6703a1>.

<sup>364</sup> *2022 School Pulse Panel*, U.S. Dep't Educ., Inst. Educ. Sci. (2022), <https://ies.ed.gov/schoolsurvey/spp/>.

<sup>365</sup> *Id.*

<sup>366</sup> *Id.*

<sup>367</sup> *Id.*

- hiring additional mental health personnel (41 percent of public schools added staff to focus on student mental health);<sup>368</sup>
- developing additional mental health resources (46 percent of public schools created or expanded mental health programs for students, 27 percent added student classes on social, emotional, and mental health and 25 percent offered guest speakers for students on mental health);<sup>369</sup>
- training teachers to help students with their mental health (56 percent of public schools offered professional development to teachers on helping students with mental health);<sup>370</sup>
- increasing disciplinary services and hiring additional personnel for disciplinary services in response to increased bullying and harassment over social media;
- addressing property damaged as a result of students acting out because of mental, social, and emotional problems Defendants' conduct caused;
- diverting time and resources from instruction activities to notify parents and guardians of students' behavioral issues and attendance;
- investigating and responding to threats made against schools and students over social media;
- updating its student handbook to address use of Defendants' platforms; and
- updating school policies to address use of Defendants' platforms.

#### **F. Impact of Social Media Use on Plaintiff**

302. Plaintiff Mesa Public Schools is the largest school district in Arizona and is located in Maricopa County, Arizona, the largest county in Arizona and the fourth most-populous county in the United States. Mesa Public Schools operates 78 schools, serving approximately 58,000 students.<sup>371</sup>

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<sup>368</sup> *Id.*

<sup>369</sup> *Id.*

<sup>370</sup> *Id.*

<sup>371</sup> *Mesa Unified District*, U.S. News & World Rep., <https://www.usnews.com/education/k12/arizona/districts/mesa-unified-district-4235-104634> (last visited Jan. 10, 2023).

303. Mesa Public Schools has been directly impacted by the mental health crisis among youth in its community.

304. There has been a surge in the proportion of youth in Plaintiff's community who say they cannot stop or control their anxiety, who feel so sad and hopeless that they stop doing the activities that they used to love, who are considering suicide, who made plans to commit suicide, and who have attempted to commit suicide.

305. Suicide was the third leading cause of death of children in Arizona in 2022.<sup>372</sup> Arizona's teenage suicide rates are higher than the national average, and nearly 1 in 5 high school students say they have seriously considered attempting suicide in the past year.<sup>373</sup>

306. Teen Lifeline, Arizona's only teen-to-teen crisis hotline, serves 25 schools in Mesa Public Schools. In June and July of 2020, Teen Lifeline reported a 46 percent increase in calls and texts from stressed teens.<sup>374</sup> And from January to August 2021, Teen Lifeline saw a 30 percent increase from the prior year, with 30 percent of calls and texts coming from teens struggling with thoughts of suicide.<sup>375</sup> The most common reason teenagers call Teen Lifeline is because they are having suicidal thoughts.<sup>376</sup>

307. Similarly, Community Bridges, a Mesa-based behavioral healthcare provider, received increased referrals for children and teenagers in the East Valley area in

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<sup>372</sup> Sara Crocker, *Not All Right: Arizona's Youth Mental Health Emergency*, Phx. Mag. (Dec. 27, 2022), <https://www.phoenixmag.com/2022/12/27/not-all-right-arizonas-youth-mental-health-emergency/>.

<sup>373</sup> Kim Powell, *Teen Suicide Rates in Arizona Higher than National Average*, KOLD News 13 (Sept. 15, 2021), <https://www.kold.com/2021/09/15/teen-suicide-rates-arizona-higher-than-national-average/>.

<sup>374</sup> Jim Walsh, *As Classrooms Reopen, Students' Mental Health a Big Concern*, E. Valley Trib. (Sept. 22, 2020), [https://www.eastvalleytribune.com/news/as-classrooms-reopen-students-mental-health-a-big-concern/article\\_a9f6d8fa-fc39-11ea-8fc7-13fb3d16b648.html](https://www.eastvalleytribune.com/news/as-classrooms-reopen-students-mental-health-a-big-concern/article_a9f6d8fa-fc39-11ea-8fc7-13fb3d16b648.html).

<sup>375</sup> Kim Powell, *Teen Suicide Rates in Arizona Higher than National Average*, KOLD News 13 (Sept. 15, 2021), <https://www.kold.com/2021/09/15/teen-suicide-rates-arizona-higher-than-national-average/>.

<sup>376</sup> *Id.*

2020.<sup>377</sup> “We have seen an increase in referrals for suicidal ideation, anxiety and depression,” said Natalia Chimbo Andrade, Community Bridges’ director of community education and outreach.<sup>378</sup>

308. These increases in anxiety, depression, and suicidal behavior have contributed to students’ increased behavioral problems in Plaintiff’s schools. During the 2021-22 school year, more of Mesa Public Schools’ students got into trouble than in previous years. Mesa Public Schools recorded over 18,000 incidents involving discipline, an increase of nearly 3,500 disciplinary incidents from the 2018-2019 school year.<sup>379</sup>

309. The increase in students who report suffering from anxiety and depression and the increase in behavioral issues have not gone unnoticed. “We know that many of these incidents of aggression and those other policy violations are begging for additional mental health crisis counseling,” said Mesa Public Schools Associate Superintendent Holly Williams.<sup>380</sup>

310. While Plaintiff deals with increasing disciplinary incidents on the one hand, it must also deal with absent students on the other. Indeed, chronic absenteeism has increased, with 38 percent of Mesa Public Schools’ students missing more than 10 percent of school days during the 2021-22 school year.<sup>381</sup>

311. The adverse effects of Defendants’ platforms on students’ mental health are

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<sup>377</sup> Jim Walsh, *As Classrooms Reopen, Students’ Mental Health a Big Concern*, E. Valley Trib. (Sept. 22, 2020), [https://www.eastvalleytribune.com/news/as-classrooms-reopen-students-mental-health-a-big-concern/article\\_a9f6d8fa-fc39-11ea-8fc7-13fb3d16b648.html](https://www.eastvalleytribune.com/news/as-classrooms-reopen-students-mental-health-a-big-concern/article_a9f6d8fa-fc39-11ea-8fc7-13fb3d16b648.html).

<sup>378</sup> *Id.*

<sup>379</sup> Kevin Reagan, *Disciplinary Actions on the Rise at Mesa Public Schools, Data Shows*, 12News (June 7, 2022) <https://www.12news.com/article/news/education/mesa-public-schools-seems-to-have-a-discipline-problem-numbers-show/75-252ce735-27b0-47b4-9326-895eaab44ec2>.

<sup>380</sup> Scott Schumaker, *Some Troubling Data for Mesa School Officials*, E. Valley Trib. (June 5, 2022), [https://www.eastvalleytribune.com/news/some-troubling-data-for-mesa-school-officials/article\\_f9e7123e-e374-11ec-82cd-9f52ba63788c.html](https://www.eastvalleytribune.com/news/some-troubling-data-for-mesa-school-officials/article_f9e7123e-e374-11ec-82cd-9f52ba63788c.html).

<sup>381</sup> *Id.*

well-captured by a video created by a Mesa Public Schools student for her English Composition class, entitled “Nomophobia,” which she describes as “a fear of being detached from mobile phone connectivity.”<sup>382</sup> This fear is corroborated by the data above, which shows that students are on Defendants’ platforms almost constantly. The video shows a figure repeatedly checking their phone until they are sucked into the screen. The figure then emerges with the phone always in their hand and it becomes chained to their wrist. When the figure realizes they are chained to their phone and breaks the chain, they are sucked into a dark pit. They are then surrounded by, and eventually killed by, social media icons, including Instagram, Facebook, Snapchat, and YouTube.

312. The pandemic and corresponding increase in time youth spend on Defendants’ platforms have intensified the youth mental health crisis and the behavioral issues Plaintiff’s students are experiencing.

313. The current youth mental health crisis has led to a marked increase in the number of Plaintiff’s students in crisis, acting out, and in need of mental health services.

314. In an attempt to address the decline in students’ mental, emotional, and social health, Plaintiff has been forced to divert resources and expend additional resources to:

a. hire additional personnel, including counselors and medical professionals to address mental, emotional, and social health issues;<sup>383</sup>

b. develop additional resources to address mental, emotional, and social health issues;<sup>384</sup>

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<sup>382</sup> *Nomophobia*, <https://www.youtube.com/watch?v=D3WziMAWXMLM>

<sup>383</sup> Jordan Houston, *Mesa Schools Home in on Student Mental Health*, E. Valley Trib. (July 31, 2019), [https://www.eastvalleytribune.com/news/mesa-schools-home-in-on-student-mental-health/article\\_0caeee1a-b21c-11e9-bcc0-87d2f56633f2.html](https://www.eastvalleytribune.com/news/mesa-schools-home-in-on-student-mental-health/article_0caeee1a-b21c-11e9-bcc0-87d2f56633f2.html); Jordan Houston, *Mesa Schools Revising Counselor’s Role*, E. Valley Trib. (Aug. 20, 2019), [https://www.eastvalleytribune.com/news/mesa-schools-revising-counselors-role/article\\_c467ec78-c077-11e9-800f-afc95ca62bf3.html](https://www.eastvalleytribune.com/news/mesa-schools-revising-counselors-role/article_c467ec78-c077-11e9-800f-afc95ca62bf3.html).

<sup>384</sup> Trisha Hendricks, *Pawsitive Peers Program in Mesa Public Schools Improves Students’ Mental Health*, 12News (Aug. 16, 2021),

- c. increase training for teachers and staff to identify students exhibiting symptoms affecting their mental, emotional, and social health;<sup>385</sup>
- d. train teachers, staff, and members of the community about the harms caused by Defendants' wrongful conduct;
- e. develop lesson plans to teach students about the dangers of using Defendants' platforms;
- f. educate students about the dangers of using Defendants' platforms;
- g. update its student handbook to address use of Defendants' platforms; and
- h. update school policies to address use of Defendants' platforms.

315. Additionally, more students have been acting out as a result of the decline Defendants caused in students' mental, emotional, and social health.<sup>386</sup> Resultingly, Plaintiff has been forced to divert resources and expend additional resources to:

- a. repair property damaged as a result of the exploitive and harmful content Defendants directed to students;<sup>387</sup>
- b. increase disciplinary services and time spent addressing bullying, harassment, and threats;

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<https://www.12news.com/article/news/education/pawsitive-peers-program-in-mesa-public-schools-improves-students-mental-health-in-arizona/75-cfcafc72-5b2e-4658-abc9-87cc34f0269b>.

<sup>385</sup> Jordan Houston, *Mesa Schools Home in on Student Mental Health*, E. Valley Trib. (July 31, 2019), [https://www.eastvalleytribune.com/news/mesa-schools-home-in-on-student-mental-health/article\\_0caeee1a-b21c-11e9-bcc0-87d2f56633f2.html](https://www.eastvalleytribune.com/news/mesa-schools-home-in-on-student-mental-health/article_0caeee1a-b21c-11e9-bcc0-87d2f56633f2.html); Jordan Houston, *Mesa Schools Revising Counselor's Role*, E. Valley Trib. (Aug. 20, 2019), [https://www.eastvalleytribune.com/news/mesa-schools-revising-counselors-role/article\\_c467ec78-c077-11e9-800f-afc95ca62bf3.html](https://www.eastvalleytribune.com/news/mesa-schools-revising-counselors-role/article_c467ec78-c077-11e9-800f-afc95ca62bf3.html).

<sup>386</sup> Kevin Reagan, *Disciplinary Actions on the Rise at Mesa Public Schools, Data Shows*, 12News (June 7, 2022) <https://www.12news.com/article/news/education/mesa-public-schools-seems-to-have-a-discipline-problem-numbers-show/75-252ce735-27b0-47b4-9326-895eaab44ec2>.

<sup>387</sup> Lisa Irish, *Schools Ask Families to Talk with Students to Prevent TikTok Challenges Damage*, AZEDNews (Oct. 13, 2021), <https://azednews.com/schools-ask-families-to-talk-with-students-to-prevent-tiktok-challenges-damage/>.

- c. confiscate devices on which students were compelled by Defendants' conduct to use while in class or school campuses to access Defendants' platforms;
- d. meet with students and the parents of students caught using Defendants' platforms at school;
- e. divert time and resources from instructional activities to notify parents and guardians of students' behavioral issues and attendance; and
- f. investigate and respond to threats made against schools and students over social media.<sup>388</sup>

316. As of the 2022-23 school year, Plaintiff employs over 150 school counselors across the district.<sup>389</sup> Eight of Plaintiff's high schools have one full time social worker.<sup>390</sup> Twenty-eight schools have a formal partnership with a behavioral health agency, which provide intake, tele-health services and therapy at the school or in the home.<sup>391</sup>

317. But even with these resources, Plaintiff cannot keep up with the increased need for mental health services because of the youth mental health crisis.

318. As a result, the rest of Plaintiff's staff must fill in the cracks to help students with mental health concerns.

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<sup>388</sup> Bianca Buono, *Arizona Schools, Law Enforcement Warn of School Threat TikTok 'Challenge,'* 12News (Dec. 16, 2021),

<https://www.12news.com/article/news/education/arizona-schools-law-enforcement-warn-of-school-threat-tiktok-challenge/75-ca263025-fc8b-4be7-8e6e-f1fc57028311>.

<sup>389</sup> *Opportunity & Achievement: School Counselors – Elementary, Junior High and High School*, Mesa Pub. Schs.,

<https://www.mpsaz.org/opportunity/schoolcounselors/#:~:text=Elementary%2C%20Junior%20High%2C%20and%20High,counselors%20across%20our%2084%20schools> (last visited Jan. 13, 2023).

<sup>390</sup> *Opportunity & Achievement: Social Workers*, Mesa Pub. Schs.,

<https://www.mpsaz.org/opportunity/socialwork/> (last visited Jan. 13, 2023).

<sup>391</sup> Michele Grimaldi, *Community Partnerships in Mesa Public Schools*, Mesa Pub. Schs. (Oct. 27, 2020),

[https://go.boarddocs.com/az/mpsaz/Board.nsf/files/BUMVJG80F796/\\$file/Community%20Partnerships%20in%20Mesa%20Public%20Schools%2010.27.20.pdf](https://go.boarddocs.com/az/mpsaz/Board.nsf/files/BUMVJG80F796/$file/Community%20Partnerships%20in%20Mesa%20Public%20Schools%2010.27.20.pdf).

319. Recently, the Arizona legislature recognized the increasing severity of the youth mental health crisis. In June 2022, in response to a spike of teen suicides in the East Valley, then-state House Speaker Rusty Bowers formed a special committee charged with trying to find solutions to the mental health crisis.<sup>392</sup>

320. Representative Joanna Osborne, the head of the Teen Mental Health House Ad Hoc Committee (“House Committee”), noted the extent of the youth mental health crisis and social media’s role in exacerbating the problem. “Teenage children today are faced with tremendous stress and pressure along the path to adulthood, and far too many succumb to substance abuse and suicidal ideations,” said Osborne.<sup>393</sup> “Struggles because of the pandemic and social media aggravate the situation further. [”]<sup>394</sup>

321. Arizona Governor Katie Hobbs has also emphasized the importance of addressing the youth mental health crisis. In her inaugural State of the State address, Governor Hobbs acknowledged that Arizona school districts, like Plaintiff, lack adequate resources to address the ongoing youth mental health crisis.<sup>395</sup> “We need to prioritize hiring social workers and counselors for our schools to address the mental health crisis among children and teenagers,” Governor Hobbs said.<sup>396</sup> “Currently each counselor in an Arizona school provides services for more than 700 kids on average. That’s the highest ratio in the nation and nearly three times the recommended standard.”<sup>397</sup>

322. But Plaintiff requires significant and long-term funding to address the nuisance Defendants have created and amplified. Such funding should not fall at the foot

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<sup>392</sup> Paul Maryniak, *Mesa Lawmaker Forms House Panel on Teen Crisis*, E. Valley Trib. (June 6, 2022), [https://www.eastvalleytribune.com/news/mesa-lawmaker-forms-house-panel-on-teen-crisis/article\\_bbc82c04-e379-11ec-8dc3-d7d51589b8e4.html](https://www.eastvalleytribune.com/news/mesa-lawmaker-forms-house-panel-on-teen-crisis/article_bbc82c04-e379-11ec-8dc3-d7d51589b8e4.html).

<sup>393</sup> *Id.*

<sup>394</sup> *Id.*

<sup>395</sup> *Transcript: Governor Hobbs 2023 State of the State Address*, Office of the Governor Katie Hobbs (Jan. 9, 2023), <https://azgovernor.gov/office-arizona-governor/news/2023/01/transcript-governor-hobbs-2023-state-state-address>.

<sup>396</sup> *Id.*

<sup>397</sup> *Id.*



of the legislature and, in turn, the public. Rather, Defendants must bear the burden of remedying their wrongs. It is time, as President Biden declared, to get “all Americans the mental health services they need.”<sup>398</sup>

**V. SECTION 230 IS NO SHIELD FOR DEFENDANTS’ CONDUCT**

323. Plaintiff anticipates that Defendants will raise section 230 of the Communications Decency Act, 47 U.S.C. § 230(c)(1), as a shield for their conduct. But section 230 is no shield for Defendants’ own acts in designing, marketing, and operating social media platforms that are harmful to youth.

324. Section 230 provides immunity from liability only to “(1) a provider or user of an interactive computer service (2) whom a plaintiff seeks to treat, under a state law cause of action, as a publisher or speaker (3) of information provided by another information content provider.” *Barnes v. Yahoo!, Inc.*, 570 F.3d 1096, 1100–01 (9th Cir. 2009), *as amended* (Sept. 28, 2009).

325. Publication generally involves traditional editorial functions, such as reviewing, editing, and deciding whether to publish or to withdraw from publication third-party content. *Lemmon v. Snap, Inc.*, 995 F.3d 1085, 1091 (9th Cir. 2021).

326. Publication does not, however, include duties related to designing and marketing a social media platform. *See id.* at 1092–93.

327. Plaintiff expressly disavows any claims or allegations that attempt to hold Defendants liable as the publisher or speaker of any information provided by third parties.

328. Section 230 does not shield Defendants’ conduct because, among other considerations: (1) Defendants are liable for their own affirmative conduct in recommending and promoting harmful content to youth; (2) Defendants are liable for

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<sup>398</sup> President Biden, State of the Union Address (Mar. 1, 2022) (transcript available at <https://www.whitehouse.gov/state-of-the-union-2022/>).

their own actions designing and marketing their social media platforms in a way that causes harm; (3) Defendants are liable for the content they create that causes harm; and (4) Defendants are liable for distributing, delivering, and/or transmitting material that they know or have reason to know is harmful, unlawful, and/or tortious.

329. First, Plaintiff is not alleging Defendants are liable for what third-parties have said on Defendants' platforms but, rather, for Defendants' own conduct. As described above, Defendants affirmatively recommend and promote harmful content to youth, such as pro-anorexia and eating disorder content. Recommendation and promotion of damaging material is not a traditional editorial function and seeking to hold Defendants liable for these actions is not seeking to hold them liable as a publisher or speaker of third party-content.

330. Second, Plaintiff's claims arise from Defendants' status as designers and marketers of dangerous social media platforms that have injured the health, comfort, and repose of its community. The nature of Defendants' platforms centers around Defendants' use of algorithms and other designs features that encourage users to spend the maximum amount of time on their platforms—not on particular third party content. The algorithms Defendants employ adapt to the social media activity of individual users to promote whatever content will trigger a particular user's attention and maximize their screen time. That is, Defendants' algorithms are user-focused rather than content-based and are indifferent to the nature and type of content they promote to users, provided that such content increases the time users spend on their platforms. In that respect, they are content neutral.

331. Third, Defendants are liable for the content they create. In addition to content such as Snapchat filters which promote body dysmorphia, Defendants send emails and notifications to youth including material they create which often promotes certain harmful content.

332. Fourth, Plaintiff does not seek to hold Defendants liable as publishers or

speakers of information provided by other content providers, but instead Plaintiff seeks to hold them liable for distributing material they know or should know is harmful or unlawful. *See Malwarebytes, Inc. v. Enigma Software Grp. USA, LLC*, 141 S. Ct. 13 (2020) (statement of Justice Thomas respecting denial of certiorari discussing the distinction between distributor and publisher liability); *cf. Restatement (Second) of Torts* § 581 (Am. Law Inst. 1977) (“[O]ne who only delivers or transmits defamatory matter published by a third person is subject to liability if, but only if, he knows or has reason to know of its defamatory character.”).

333. Ultimately, Plaintiff’s claim is not predicated on information provided by another information content provider. Rather, Plaintiff’s claim rests on Defendants’ conduct which has resulted in the current public health crisis among youth mental health.

## **VI. CAUSE OF ACTION**

### **COUNT ONE — PUBLIC NUISANCE**

334. Plaintiff incorporates each preceding paragraph as though set forth fully herein.

335. Plaintiff brings this claim under Arizona public nuisance law as to all Defendants

336. Under Arizona law, a public nuisance is an unreasonable interference with a right common to the general public that affects a considerable number of people or an entire community or neighborhood.

337. Defendants have created a mental health crisis in Mesa Public Schools, injuring the public health and safety in Plaintiff’s community and interfering with the operations, use, and enjoyment of the property of Mesa Public Schools.

338. Employees and patrons, including students, of Mesa Public Schools have a right to be free from conduct that endangers their health and safety. Yet Defendants have engaged in conduct which endangers or injures the health and safety of the employees

and students of Mesa Public Schools by designing, developing, marketing, supplying, promoting, advertising, operating, and distributing their respective social media platforms for use by students in Mesa Public Schools and in a manner that substantially interferes with the functions and operations of Mesa Public Schools and impacts the public health, safety, and welfare of the Mesa Public Schools community.

339. Each Defendant has created or assisted in the creation of a condition that is injurious to the health and safety of Plaintiff and its students and employees and interferes with the comfortable enjoyment of life and property of the Mesa Public Schools community.

340. The health and safety of the students and employees of Mesa Public Schools, including those who use, have used, or will use Defendants' platforms, as well as those affected by others' use of their platforms, are matters of substantial public interest and of legitimate concern to Plaintiff.

341. Defendants' conduct has affected and continues to affect a substantial number of people within Mesa Public Schools and is likely to continue causing significant harm.

342. Defendants' conduct has directly caused a severe disruption of the public health, order, and safety. Defendants' conduct is ongoing and continues to produce permanent and long-lasting damage.

343. This harm to youth mental health and the corresponding impacts to public health, safety, and the welfare of the Mesa Public Schools community outweighs any social utility of Defendants' wrongful conduct.

344. The rights, interests, and inconvenience to Mesa Public Schools' community far outweighs the rights, interests, and inconvenience to Defendants, who have profited tremendously from their wrongful conduct.

345. But for Defendants' actions, Plaintiff's students would not use social media platforms as frequently or long as they do today, be deluged with exploitive and harmful

content to the same degree, and the public health crisis that currently exists as a result of Defendants' conduct would have been averted.

346. Logic, common sense, justice, policy, and precedent indicate Defendants' unfair and deceptive conduct has caused the damage and harm complained of herein. Defendants knew or reasonably should have known that their design, development, marketing, supply, promotion, advertisement, operation, and distribution of their platforms would cause students to use their platforms excessively, that their marketing methods were designed to appeal to youth, and that their active efforts to increase youth use of their platforms were causing harm to youth and to schools, including youth in Mesa Public Schools.

347. Thus, the public nuisance caused by Defendants was reasonably foreseeable, including the financial and economic losses incurred by Mesa Public Schools.

348. Alternatively, Defendants' conduct was a substantial factor in bringing about the public nuisance even if a similar result would have occurred without it. By designing, developing, marketing, supplying, promoting, advertising, operating, and distributing their platforms in a manner intended to maximize the time youth spend on their respective platforms—despite knowledge of the harms to youth from their wrongful conduct—Defendants directly facilitated the widespread, excessive, and habitual use of their platforms and the public nuisance effecting Mesa Public Schools. By seeking to capitalize on their success by refining their platforms to increase the time youth spend on their platforms, Defendants directly contributed to the public health crisis and the public nuisance effecting Mesa Public Schools.

349. Defendants' conduct is especially injurious to Mesa Public Schools because, as a direct and proximate cause of Defendants' conduct creating or assisting in the creation of a public nuisance, Plaintiff and its students and employees have sustained and will continue to sustain substantial injuries.

350. Plaintiff has had to take steps to mitigate the harm and disruption caused by Defendants' conduct, including the following:

- a. hiring additional personnel to address mental, emotional, and social health issues;
- b. developing additional resources to address mental, emotional, and social health issues;
- c. increasing training for teachers and staff to identify students exhibiting symptoms affecting their mental, emotional, and social health;
- d. training teachers, staff, and members of the community about the harms caused by Defendants' wrongful conduct;
- e. developing lesson plans to teach students about the dangers of using Defendants' platforms;
- f. educating students about the dangers of using Defendants' platforms;
- g. addressing property damaged as a result of students acting out because of mental, social, and emotional problems Defendants' conduct is causing;
- h. increasing disciplinary services and time spent addressing bullying, harassment, and threats;
- i. confiscating devices on which students use Defendants' platforms while in class or on Plaintiff's school campuses;
- j. meeting with students and the parents of students caught using Defendants' platforms at school or other disciplinary matters related to students' use of Defendants' platforms;
- k. diverting time and resources from instruction activities to notify parents and guardians of students' behavioral issues and attendance;
- l. investigating and responding to threats made against Plaintiff's schools and students over social media;
- m. updating its student handbook to address use of Defendants' platforms; and

n. updating school policies to address use of Defendants' platforms.

351. Fully abating the nuisance resulting from Defendants' conduct will require much more than these steps.

352. Mesa Public Schools requests an order providing for abatement of the public nuisance that Defendants have created or assisted in the creation of, and enjoining Defendants from future conduct contributing to the public nuisance described above.

353. Plaintiff also seeks the maximum statutory and civil penalties permitted by law, including actual and compensatory damages, as a result of the public nuisance created by Defendants.

354. Defendants are jointly and severally liable because they have acted in concert with each other and because Plaintiff is not at fault.

355. Defendants' conduct, as described above, was intended to serve their own interests despite having reason to know and consciously disregarding a substantial risk that their conduct might significantly injure the rights of others, including Plaintiff, and/or Defendants consciously pursued a course of conduct knowing that it created a substantial risk of significant harm to others, including Plaintiff. Defendants regularly risk the health of consumers and users of their platforms with full knowledge of the dangers of their platforms. Defendants consciously decided not to redesign, warn, or inform the unsuspecting public, including Plaintiff's students or Plaintiff. Defendants' willful, knowing, and reckless conduct therefore warrants an award of aggravated or punitive damages.

## **COUNT TWO — NEGLIGENCE**

356. Plaintiff incorporates by reference all preceding paragraphs.

357. Defendants owed Plaintiff a duty to not expose Plaintiff to an unreasonable risk of harm, and to act with reasonable care as a reasonably careful person and/or company would act under the circumstances.

358. At all times relevant to this litigation, Defendants owed a duty to

consumers and the general public, including Plaintiff, to exercise reasonable care in the design, research, development, testing, marketing, supply, promotion, advertisement, operation, and distribution of Defendants social media platforms, including the duty to take all reasonable steps necessary to design, research , market, advertise, promote, operate, and/or distribute their platforms in a way that is not unreasonably dangerous to consumers users, including children.

359. At all times relevant to this litigation, Defendants owed a duty to consumers and the general public, including Plaintiff, to exercise reasonable care in the design, research, development, testing, marketing, supply, promotion, advertisement, operation, and distribution of their social media platforms, including the duty to provide accurate, true, and correct information about the risks of using Defendants' platforms; and appropriate, complete, and accurate warnings about the potential adverse effects of extended social media use, in particular, social media content Defendants directed via their algorithms to users.

360. At all times relevant to this litigation, Defendants knew or, in the exercise of reasonable care, should have known of the hazards and dangers of their respective social media platforms and specifically, the health hazards their platforms posed to youth in particular, especially extended or problematic use of such platforms.

361. Accordingly, at all times relevant to this litigation, Defendants knew or, in the exercise of reasonable care, should have known that use of Defendants' social media platforms by youth could cause Plaintiff's injuries and thus created a dangerous and unreasonable risk of injury to Plaintiff.

362. Defendants also knew or, in the exercise of reasonable care, should have known that users and consumers of Defendants' social media platforms were unaware of the risks and the magnitude of the risks associated with the use of Defendants' platforms including but not limited to the risks of extended or problematic social media use and the likelihood that algorithm-based recommendations would expose child and adolescent



users to content that is violent, sexual, or encourages self-harm, among other types of harmful content.

363. As such, Defendants, by action and inaction, representation and omission, breached their duty of reasonable care, failed to exercise ordinary care, and failed to act as a reasonably careful person and/or company would act under the circumstances in the design, research, development, testing, marketing, supply, promotion, advertisement, operation, and distribution of their social media platforms, in that Defendants designed, researched, developed, tested, marketed, supplied, promoted, advertised, operated, and distributed social media platforms that Defendants knew or had reason to know would negatively impact the mental health of consumers, particularly youth, and failed to prevent or adequately warn of these risks and injuries.

364. Despite their ability and means to investigate, study, and test their social media platforms and to provide adequate warnings, Defendants have failed to do so. Defendants have wrongfully concealed information and have made false and/or misleading statements concerning the safety and use of Defendants' social media platforms.

365. Defendants' negligence includes:

a. Designing, researching, developing, marketing, supplying, promoting, advertising, operating, and distributing their social media platforms without thorough and adequate pre- and post-market testing; design, research, development, testing, marketing, supply, promotion, advertisement, operation, and distribution

b. Failing to sufficiently study and conduct necessary tests to determine whether or not their social media platforms were safe for youth users;

c. Failing to use reasonable and prudent care in the research, design, development, testing, marketing, supply, promotion, advertisement, operation, and distribution of their social media platforms so as to avoid the risk encouraging extended social media use;

d. Designing their social media platforms to maximize the amount of time users spend on the platform and causing excessive and problematic use of their platforms, particularly among youth, through the use of algorithm-based feeds, social reciprocity, and IVR;

e. Failing to implement adequate safeguards in the design and operation of their platforms to ensure they would not encourage excessive and problematic use of their platforms;

f. Designing and manufacturing their platforms to appeal to minors and young people who lack the same cognitive development as adults and are particularly vulnerable to social rewards like IVR and social reciprocity;

g. Failing to take adequate steps to prevent their platforms from being promoted, distributed, and used by minors under the age of 13;

h. Failing to provide adequate warnings to child and adolescent users or parents who Defendants could reasonably foresee would use their platforms;

i. Failing to disclose to, or warn, Plaintiff, users, consumers, and the general public of the negative mental health consequences associated with social media use, especially for children and adolescents;

j. Failing to disclose to Plaintiff, users, consumers, and the general public that Defendants' platforms are designed to maximize the time users, particularly youth, spend on Defendants' platforms and cause negative mental health consequences;

k. Representing that Defendants' platforms were safe for child and adolescent users when, in fact, Defendants knew or should have known that the platforms presented acute mental health concerns for young users;

l. Failing to alert users and the general public, including students at Plaintiff's schools of the true risks of using Defendants' platforms;

m. Advertising, marketing; and recommending Defendants' platforms while concealing and failing to disclose or warn of the dangers known by Defendants to be

associated with, or caused by, youth use of Defendants' platforms;

n. Continuing to design, research, develop, market, supply, promote, advertise, operate, and distribute Defendants' platforms with knowledge that Defendants' platforms are unreasonably unsafe, addictive, and dangerous to youth mental health;

o. Failing to modify Defendants' algorithms, which are used to recommend content to users, in a manner that would no longer prioritize maximizing the amount of time users spend on Defendants' platforms over the safety of its youth users;

p. Failing to adequately modify Defendants' algorithm-based recommendations to filter out content that expose child and adolescent users to content that is violent, sexual, or encourages self-harm, among other types of harmful content.

q. Committing other failures, acts, and omissions set forth herein.

366. Defendants knew or should have known that it was foreseeable that Plaintiff would suffer injuries as a result of Defendants' failure to exercise reasonable care in designing, researching, developing, testing, marketing, supplying, promoting, advertising, operating, and distributing Defendants' platforms, particularly when Defendants' platforms were designed, developed, operated and marketed to maximize the time youth spend on Defendants' platforms.

367. Plaintiff did not know the nature and extent of the injuries that could result from the intended use of Defendants' social media platforms by Plaintiff's students.

368. Defendants' negligence helped to and did produce, and was the proximate cause of, the injuries, harm, and economic losses that Plaintiff suffered and will continue to suffer, and such injuries, harm, and economic losses would not have happened without Defendants' negligence as described herein.

369. The mental health crisis caused and/or significantly contributed to by Defendants has caused a major disruptive behavioral situation in Plaintiff's schools, and Plaintiff has had to take steps to mitigate the harm and disruption caused by Defendants' conduct, including the following:

- a. hiring additional personnel to address mental, emotional, and social health issues;
  - b. developing additional resources to address mental, emotional, and social health issues;
  - c. increasing training for teachers and staff to identify students exhibiting symptoms affecting their mental, emotional, and social health;
  - d. training teachers, staff, and members of the community about the harms caused by Defendants' wrongful conduct;
  - e. developing lesson plans to teach students about the dangers of using Defendants' platforms;
  - f. educating students about the dangers of using Defendants' platforms;
  - g. addressing property damaged as a result of students acting out because of mental, social, and emotional problems Defendants' conduct is causing;
  - h. increasing disciplinary services and time spent addressing bullying, harassment, and threats;
  - i. confiscating devices on which students use Defendants' platforms while in class or on Plaintiff's school campuses;
  - j. meeting with students and the parents of students caught using Defendants' platforms at school or other disciplinary matters related to students' use of Defendants' platforms;
  - k. diverting time and resources from instruction activities to notify parents and guardians of students' behavioral issues and attendance;
  - l. investigating and responding to threats made against Plaintiff's schools and students over social media;
  - m. updating its student handbook to address use of Defendants' platforms; and
  - n. updating school policies to address use of Defendants' platforms.
370. Defendants' conduct, as described above, was intended to serve their own

interests despite having reason to know and consciously disregarding a substantial risk that their conduct might significantly injure the rights of others, including Plaintiff, and/or Defendants consciously pursued a course of conduct knowing that it created a substantial risk of significant harm to others, including Plaintiff. Defendants regularly risk the health of consumers and users of their platforms with full knowledge of the dangers of their platforms. Defendants consciously decided not to redesign, warn, or inform the unsuspecting public, including Plaintiff's students or Plaintiff. Defendants' willful, knowing, and reckless conduct therefore warrants an award of aggravated or punitive damages.

## **VII. PRAYER FOR RELIEF**

WHEREFORE, Plaintiff prays for judgment as follows:

371. Entering an Order that the conduct alleged herein constitutes a public nuisance under Arizona law;
372. Entering an Order that Defendants are jointly and severally liable;
373. Entering an Order requiring Defendants to abate the public nuisance described herein and to deter and/or prevent the resumption of such nuisance;
374. Enjoining Defendants from engaging in further actions causing or contributing to the public nuisance as described herein;
375. Awarding equitable relief to fund prevention education and treatment for excessive and problematic use of social media;
376. Awarding actual, compensatory, and punitive damages;
377. Awarding statutory damages in the maximum amount permitted by law;
378. Awarding reasonable attorneys' fees and costs of suit;
379. Awarding pre-judgment and post-judgment interest; and
380. Such other and further relief as the Court deems just and proper under the circumstances.

**VIII. JURY TRIAL DEMAND**

381. Plaintiff hereby demands a trial by jury.

DATED this 26th day of January, 2023.

LAW OFFICE OF JOSEPH C. TANN, KELLER ROHRBACK L.L.P.  
PLLC

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CIVIL COVER SHEET

The JS 44 civil cover sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. (SEE INSTRUCTIONS ON NEXT PAGE OF THIS FORM.)

I. (a) PLAINTIFFS
Mesa Public Schools
(b) County of Residence of First Listed Plaintiff Maricopa
(c) Attorneys (Firm Name, Address, and Telephone Number)
Keller Rohrback L.L.P., 3101 North Central Ave., Suite 1400, Phoenix, AZ 85012, 602-248-0088

DEFENDANTS
Meta Platforms, Inc. et al.
County of Residence of First Listed Defendant
NOTE: IN LAND CONDEMNATION CASES, USE THE LOCATION OF THE TRACT OF LAND INVOLVED.
Attorneys (If Known)

II. BASIS OF JURISDICTION (Place an "X" in One Box Only)
1 U.S. Government Plaintiff
2 U.S. Government Defendant
3 Federal Question (U.S. Government Not a Party)
4 Diversity (Indicate Citizenship of Parties in Item III)

III. CITIZENSHIP OF PRINCIPAL PARTIES (Place an "X" in One Box for Plaintiff and One Box for Defendant)
PTF DEF
Citizen of This State 1 1
Citizen of Another State 2 2
Citizen or Subject of a Foreign Country 3 3
Incorporated or Principal Place of Business In This State 4 4
Incorporated and Principal Place of Business In Another State 5 5
Foreign Nation 6 6

IV. NATURE OF SUIT (Place an "X" in One Box Only) Click here for: Nature of Suit Code Descriptions.

Table with columns: CONTRACT, REAL PROPERTY, CIVIL RIGHTS, TORTS, PRISONER PETITIONS, FORFEITURE/PENALTY, LABOR, IMMIGRATION, BANKRUPTCY, SOCIAL SECURITY, FEDERAL TAX SUITS, OTHER STATUTES. Includes codes for various legal actions like 110 Insurance, 310 Airplane, 365 Personal Injury, etc.

V. ORIGIN (Place an "X" in One Box Only)
1 Original Proceeding
2 Removed from State Court
3 Remanded from Appellate Court
4 Reinstated or Reopened
5 Transferred from Another District (specify)
6 Multidistrict Litigation - Transfer
8 Multidistrict Litigation - Direct File

VI. CAUSE OF ACTION
Cite the U.S. Civil Statute under which you are filing (Do not cite jurisdictional statutes unless diversity):
28 U.S.C. § 1332(a)
Brief description of cause:
public nuisance

VII. REQUESTED IN COMPLAINT:
CHECK IF THIS IS A CLASS ACTION UNDER RULE 23, F.R.Cv.P. DEMAND \$
CHECK YES only if demanded in complaint:
JURY DEMAND: [X] Yes [ ] No

VIII. RELATED CASE(S) IF ANY
(See instructions):
JUDGE DOCKET NUMBER

DATE: Jan 26, 2023
SIGNATURE OF ATTORNEY OF RECORD: /s/ Ron Kilgard

FOR OFFICE USE ONLY
RECEIPT # AMOUNT APPLYING IFP JUDGE MAG. JUDGE



**INSTRUCTIONS FOR ATTORNEYS COMPLETING CIVIL COVER SHEET FORM JS 44**

## Authority For Civil Cover Sheet

The JS 44 civil cover sheet and the information contained herein neither replaces nor supplements the filings and service of pleading or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. Consequently, a civil cover sheet is submitted to the Clerk of Court for each civil complaint filed. The attorney filing a case should complete the form as follows:

- I.(a) Plaintiffs-Defendants.** Enter names (last, first, middle initial) of plaintiff and defendant. If the plaintiff or defendant is a government agency, use only the full name or standard abbreviations. If the plaintiff or defendant is an official within a government agency, identify first the agency and then the official, giving both name and title.
- (b) County of Residence.** For each civil case filed, except U.S. plaintiff cases, enter the name of the county where the first listed plaintiff resides at the time of filing. In U.S. plaintiff cases, enter the name of the county in which the first listed defendant resides at the time of filing. (NOTE: In land condemnation cases, the county of residence of the "defendant" is the location of the tract of land involved.)
- (c) Attorneys.** Enter the firm name, address, telephone number, and attorney of record. If there are several attorneys, list them on an attachment, noting in this section "(see attachment)".
- II. Jurisdiction.** The basis of jurisdiction is set forth under Rule 8(a), F.R.Cv.P., which requires that jurisdictions be shown in pleadings. Place an "X" in one of the boxes. If there is more than one basis of jurisdiction, precedence is given in the order shown below.  
 United States plaintiff. (1) Jurisdiction based on 28 U.S.C. 1345 and 1348. Suits by agencies and officers of the United States are included here. United States defendant. (2) When the plaintiff is suing the United States, its officers or agencies, place an "X" in this box.  
 Federal question. (3) This refers to suits under 28 U.S.C. 1331, where jurisdiction arises under the Constitution of the United States, an amendment to the Constitution, an act of Congress or a treaty of the United States. In cases where the U.S. is a party, the U.S. plaintiff or defendant code takes precedence, and box 1 or 2 should be marked.  
 Diversity of citizenship. (4) This refers to suits under 28 U.S.C. 1332, where parties are citizens of different states. When Box 4 is checked, the citizenship of the different parties must be checked. (See Section III below; **NOTE: federal question actions take precedence over diversity cases.**)
- III. Residence (citizenship) of Principal Parties.** This section of the JS 44 is to be completed if diversity of citizenship was indicated above. Mark this section for each principal party.
- IV. Nature of Suit.** Place an "X" in the appropriate box. If there are multiple nature of suit codes associated with the case, pick the nature of suit code that is most applicable. Click here for: [Nature of Suit Code Descriptions](#).
- V. Origin.** Place an "X" in one of the seven boxes.  
 Original Proceedings. (1) Cases which originate in the United States district courts.  
 Removed from State Court. (2) Proceedings initiated in state courts may be removed to the district courts under Title 28 U.S.C., Section 1441.  
 Remanded from Appellate Court. (3) Check this box for cases remanded to the district court for further action. Use the date of remand as the filing date.  
 Reinstated or Reopened. (4) Check this box for cases reinstated or reopened in the district court. Use the reopening date as the filing date.  
 Transferred from Another District. (5) For cases transferred under Title 28 U.S.C. Section 1404(a). Do not use this for within district transfers or multidistrict litigation transfers.  
 Multidistrict Litigation – Transfer. (6) Check this box when a multidistrict case is transferred into the district under authority of Title 28 U.S.C. Section 1407.  
 Multidistrict Litigation – Direct File. (8) Check this box when a multidistrict case is filed in the same district as the Master MDL docket.  
**PLEASE NOTE THAT THERE IS NOT AN ORIGIN CODE 7.** Origin Code 7 was used for historical records and is no longer relevant due to changes in statute.
- VI. Cause of Action.** Report the civil statute directly related to the cause of action and give a brief description of the cause. **Do not cite jurisdictional statutes unless diversity.** Example: U.S. Civil Statute: 47 USC 553 Brief Description: Unauthorized reception of cable service.
- VII. Requested in Complaint.** Class Action. Place an "X" in this box if you are filing a class action under Rule 23, F.R.Cv.P.  
 Demand. In this space enter the actual dollar amount being demanded or indicate other demand, such as a preliminary injunction.  
 Jury Demand. Check the appropriate box to indicate whether or not a jury is being demanded.
- VIII. Related Cases.** This section of the JS 44 is used to reference related pending cases, if any. If there are related pending cases, insert the docket numbers and the corresponding judge names for such cases.

**Date and Attorney Signature.** Date and sign the civil cover sheet.