**2-27-21 Enriching Science Curricula With Ads**

**MEDIA LITERACY**

Enriching Science Curricula With Ads

Teachers can use advertisements in a variety of media to help students cement their science knowledge and develop media literacy skills.

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Leigh Green / Alamy Stock Photo

The type of science that appears in popular advertisements is often different from what is presented in textbooks and used in formal educational settings. Given their prevalence, advertisements can serve as a springboard to teach science content and as vehicles for informal learning about science.

Advertisements provide context for students to engage in reasoning, argumentation, decision-making, and examination of scientific ideas. As a teaching strategy, the use of ads is an effective teaching tool that can be applied in the in-person classroom and for online learning.

Additionally, advertisements can be used to teach and learn about science concepts, to investigate a claim, or to unravel media messages:

* Using popular advertisements based in science results in more curiosity, more questions, and a more interactive learning and teaching environment.
* Advertisements assist students in making evaluations on the accuracy of the science information in the media.
* Analyzing advertisements can make students more aware of the scientific world surrounding them while highlighting the importance of being a skeptic about that world. Identifying the science content that is missing from the advertisements helps students make informed decisions about the content or product.

**SELECT ADVERTISEMENTS IN SYNC WITH YOUR LESSONS**

Teachers are constantly trying to improve their instructional plans to integrate novel teaching material into their lesson plans. Selecting advertisements requires teachers to be attentive as they come across an advertisement or commercial that might be relevant to teaching a specific concept. Alternatively, some websites host [a database of advertisements](https://www.adsoftheworld.com/) with search filters that teachers may use to find an advertisement that matches the focus of the lesson.

A basic Google Images search also yields hundreds of print advertisements. You can use search terms like “advertisements,” “billboard advertisements,” or “advertisements + *key term*.” Key terms can be scientific and vary based on the content discussed, such as “ecology,” “sugar,” “protein,” “enzyme,” “DNA,” or “pollution,” or they can be broad, such as “detergents,” “cars,” “cosmetics,” “food,” etc.

In more concrete terms, selecting an advertisement depends on grade level, the content, and the skills that the teacher wants the students to practice in a given activity.

Grade level: Advertisements might contain a single scientific term or a text. For elementary and middle school students, [billboard advertisements with basic scientific terms](https://futurism.com/15-awesome-science-advertisements), instead of a text, may be used to introduce a certain concept or to motivate them to think about it. For example, a billboard [advertisement on pollution](https://www.google.com/search?q=advertisements+%2B+pollution&tbm=isch&hl=en&chips=q:ad+pollution,g_1:environmental:SY2P_RKPVC4%3D&sa=X&ved=2ahUKEwjZu7S9jJbzAhUJq3IEHY3AAKYQ4lYoAHoECAEQEg&biw=1903&bih=880#imgrc=ApEIymJEhATtGM) may be used to introduce global warming, [or one on plastic waste](https://www.google.com/search?q=advertisements+%2B+pollution&tbm=isch&ved=2ahUKEwiR1NLcipbzAhXnqnIEHW_cDOMQ2-cCegQIABAA&oq=advertisements+%2B+pollution&gs_lcp=CgNpbWcQAzIGCAAQCBAeMgYIABAIEB46BAgAEB46BggAEAUQHlC1zhxYqtYcYKjYHGgAcAB4AIABWYgBywWSAQE5mAEAoAEBqgELZ3dzLXdpei1pbWfAAQE&sclient=img&ei=gPdMYZGUH-fVytMP77izmA4&bih=880&biw=1920&hl=en#imgrc=F-oyNKxdKjeitM) may introduce the concept reduce-reuse-recycle.

Alternatively, advertisements with scientific texts may be used with high school students who generally have an in-depth understanding of science content. For example, [a beauty product may be used](https://www.google.com/search?q=advertisements+%2B+genes&tbm=isch&ved=2ahUKEwj4q-fykZbzAhVUrHIEHfpxBKYQ2-cCegQIABAA&oq=advertisements+%2B+genes&gs_lcp=CgNpbWcQAzoGCAAQCBAeUNQEWL4GYPgLaABwAHgAgAFKiAHSAZIBATOYAQCgAQGqAQtnd3Mtd2l6LWltZ8ABAQ&sclient=img&ei=Bv9MYfiQAtTYytMP-uORsAo&bih=937&biw=1903&hl=en#imgrc=Al-yr2VTezGvkM) to discuss DNA and genes or a [car ad can be used](https://www.google.com/search?q=advertisements+%2B+ecofriendly+cars&tbm=isch&ved=2ahUKEwjf0t3_kpbzAhUcqXIEHauMCQEQ2-cCegQIABAA&oq=advertisements+%2B+ecofriendly+cars&gs_lcp=CgNpbWcQA1DxmgFY9J8BYLmiAWgAcAB4AIABWYgBjgOSAQE1mAEAoAEBqgELZ3dzLXdpei1pbWfAAQE&sclient=img&ei=LQBNYZ-II5zSytMPq5mmCA&bih=937&biw=1903&hl=en#imgrc=MbUEAUQQcdABdM) to discuss speed and fuel consumption.

Content matter: Whether general science, biology, physics, or chemistry, advertisements offer a variety of samples. Finding a relevant advertisement requires varying the key term and being creative about it. For example, a [headphone advertisement](https://www.google.com/search?q=advertisements+%2B+headphone&tbm=isch&ved=2ahUKEwiq5MyPzJbzAhWxmXIEHTcaC0UQ2-cCegQIABAA&oq=advertisements+%2B+headphone&gs_lcp=CgNpbWcQAzIGCAAQCBAeOgQIABAeOgYIABAFEB5QoHpYyo0BYIGQAWgAcAB4AIABZ4gB_waSAQQxMC4xmAEAoAEBqgELZ3dzLXdpei1pbWfAAQE&sclient=img&ei=EzxNYeqOKbGzytMPt7SsqAQ&bih=937&biw=1903&hl=en#imgrc=AjLpLUIgmDwwAM) can be used to discuss noise/energy in physics; [one about diabetes](https://www.google.com/search?q=advertisement+%2B+diabetes&tbm=isch&ved=2ahUKEwj8joC6lpbzAhWYrXIEHZv-ANQQ2-cCegQIABAA&oq=advertisement+%2B+diabetes&gs_lcp=CgNpbWcQAzIGCAAQCBAeMgYIABAIEB4yBggAEAgQHjIGCAAQCBAeMgYIABAIEB4yBggAEAgQHjIGCAAQCBAeOgQIABAeOgYIABAFEB5QoRdYnCFguSJoAHAAeACAAXKIAaEFkgEDNy4xmAEAoAEBqgELZ3dzLXdpei1pbWfAAQE&sclient=img&ei=zQNNYbz0BJjbytMPm_2DoA0&bih=937&biw=1920#imgrc=zqpPhm86J8vI3M) can introduce insulin/pancreas function in biology; [ads about different shampoos](https://www.google.com/search?q=advertisements+%2B+shampoo&tbm=isch&ved=2ahUKEwjWgNfNmJbzAhVyqHIEHXm6CjkQ2-cCegQIABAA&oq=advertisements+%2B+shampoo&gs_lcp=CgNpbWcQAzIECAAQHjoGCAAQCBAeUOSvA1i-tgNggrkDaABwAHgAgAFZiAGyBJIBATeYAQCgAQGqAQtnd3Mtd2l6LWltZ8ABAQ&sclient=img&ei=DwZNYZa9DfLQytMP-fSqyAM&bih=937&biw=1903&hl=en#imgrc=pTBsSzWOnVZgoM) can be used to discuss sulfates in chemistry.

Depending on the grade level and the students’ content knowledge, you can decide to introduce the advertisement as a focusing event before explaining the science behind it in depth; or you can present the advertisement after the concept has been discussed for students to solidify their understanding of the concept and be able to transfer it to a real-life application.

Activity: Advertisements can be used to provoke science-related questions or investigations. Inquiry activities are particularly useful for students to analytically examine and make rational decisions about scientific claims in advertisements. Students can test a product or formulate a hypothesis about the nature of a chemical compound. For example, when discussing sugar in a science/biology class, a lollipop advertisement may be used to investigate if ants prefer sugar over [artificial sweeteners](https://www.google.com/search?q=advertisement+%2B+sugar+free&tbm=isch&ved=2ahUKEwiFnsnwmZbzAhUaqXIEHXadBuwQ2-cCegQIABAA&oq=advertisement+%2B+sugar+free&gs_lcp=CgNpbWcQAzIHCCMQ7wMQJzIGCAAQCBAeMgYIABAIEB46BAgAEB5QrGpY4nRgynVoAHAAeACAAVmIAZEGkgECMTCYAQCgAQGqAQtnd3Mtd2l6LWltZ8ABAQ&sclient=img&ei=ZAdNYYXcMprSytMP9rqa4A4&bih=937&biw=1920&hl=en#imgrc=QrpENKr8EyC-UM). A [Kleenex advertisement](https://www.google.com/search?q=advertisements+%2B+environment&tbm=isch&ved=2ahUKEwjjwP3WipbzAhU4rnIEHQ2XAiIQ2-cCegQIABAA&oq=advertisements+%2B+environment&gs_lcp=CgNpbWcQAzIGCAAQCBAeMgYIABAIEB4yBggAEAgQHjoECAAQHlCLP1ixUmCjVGgAcAB4AIABWogB9QaSAQIxMZgBAKABAaoBC2d3cy13aXotaW1nwAEB&sclient=img&ei=dPdMYeO2JrjcytMPja6KkAI&bih=880&biw=1920&hl=en#imgrc=qZMN6XleYKW8gM) can be used to investigate sustainability.

Encourage students to formulate inquiry questions to verify the claims in advertisements using their content knowledge or discuss regulations that may be applied to protect consumers. As a culminating activity, students can work in groups to create an advertisement related to a concept discussed in class. For example, they can edit or re-create an advertisement such as the [structure of DNA](https://www.adsoftheworld.com/media/print/dna), or select and analyze one to identify [false or misleading claims](https://www.businessinsider.com/false-advertising-scandals-2016-3).

**USE QUESTIONS TO GUIDE STUDENTS**

Try these sample guiding questions:

* What are some words or phrases that seem vague in this advertisement?
* What (science) questions come to your mind after reading/watching this advertisement?
* What science ideas/concepts are missing from the advertisement that would, if present, make it more accurate?
* To what extent do you agree/are you convinced by the statement in the advertisement?
* How can you check the scientific validity of the statement?
* Are you satisfied, as a consumer, with the use of scientific information in this advertisement?

As a tool and topic in the science classroom, advertisements have the potential to enrich curricula and pedagogies and offer experiences for students to become scientifically literate consumers. Advertisements, which deploy science and scientific language as a marketing message, can be used to educate students about science as they learn how to unravel media messages. Using advertisements as educational content is essential for building students’ [science media literacy skills](https://www.edutopia.org/article/how-develop-students-science-media-literacy) and for understanding what makes advertisements memorable or persuasive.