Ford DIY Air Filtration Kit That Reduces COVID-19 in the Air
Validated by Peer-Reviewed Scientific Research Journal

- Ford DIY air filtration system, co-developed with Lasko, enables easy mitigation of risk of airborne spread of COVID-19 in enclosed spaces like classrooms with poor ventilation
- Ford is donating 20,000 Scrappy Filtration kits to underserved communities; kit features a cardboard enclosure, 20-inch Lasko box fan and high-efficiency air filter – ready for assembly
- Effectiveness of this DIY air filtration kit is backed up by peer-reviewed research to be published this month in prominent scientific journal “Physics of Fluids”

DEARBORN, Mich., May 12, 2021 – Ford’s latest innovation in the fight against COVID-19 is an air filtration kit, co-developed with Lasko, that you can assemble at home or in school – and the science behind it is backed up by a peer-reviewed research article appearing this month in a prominent scientific journal.

Ford and Lasko are donating 20,000 of these easy-to-make kits to underserved communities. Featuring an open-source design, the kit can be used by others interested in making their own to help reduce COVID-19 in rooms and other enclosed spaces.

In conjunction with the Ford Fund, the company’s philanthropic arm, Ford has shipped most of the 20,000 planned units to organizations in underserved communities, including school districts in Los Angeles, New York City and throughout Southeast Michigan.

Scrappy Filtration, as it’s called by Ford’s COVID-19-fighting Project Apollo team, is an air filtration kit made from an easy-to-assemble die-cut cardboard base, a 20-inch Lasko box fan, and a 20x20x4-inch air filter with a standard minimum efficiency reporting value of 13. The air filter is placed inside the folded cardboard base, with the fan placed on top. The fan operates on high for maximum filtration – discharging clean air downward as it pulls unfiltered air from above.

The air filtration kit is intended to supplement a room’s existing filtration system to further help reduce the risk of COVID-19 virus particle concentration. The kit is based on Ford research as well as scientific studies by academic and government agencies.

“We wanted to help underserved communities reduce the risk of airborne COVID-19 in poorly ventilated areas, and it’s great to not only develop something that can meet that goal, but has the data to back it up,” said Dr. Cynthia Flanigan, director, vehicle research and technology, Ford research and advanced engineering. “We engaged with technical leads from University of Minnesota, as well as other scientists doing research in this space, such as Well Living Lab to make sure our research was rock-solid.”

The article, titled “Airborne Transmission of COVID-19 and Mitigation Using Box Fan Air Cleaners in a Poorly Ventilated Classroom,” was published this week in the prominent scientific journal “Physics of Fluids.”

Led by Ford with the University of Minnesota, the article cites an investigation using supercomputer air flow analysis to determine if a low-cost box fan air cleaner can mitigate the risk of airborne transmission of COVID-19 in a classroom equipped with a single horizontal unit ventilator.

The study found that box fan air cleaners like this can serve as an effective low-cost alternative for mitigating airborne transmission risks in poorly ventilated spaces. In addition to the peer-reviewed article, research conducted by Well Living
Lab, founded as a collaboration between Delos and Mayo Clinic, found similar air purifiers were effective at improving air quality in poorly ventilated areas.

“Low-cost portable air purifiers, similar to those used in our testing, are impactful at improving indoor air quality when appropriately matched to a room’s size,” said Dr. Meng Kong, research scientist, Well Living Lab. “This is particularly important for shared spaces in older buildings where ventilating with clean outdoor air or making substantial improvements to HVAC systems is not an option. Portable air purifiers may be beneficial as one component of a layered approach of precautions, such as distancing, handwashing and mask-wearing, to protect individuals from respiratory virus transmission.”

Ford also offers a downloadable template for the cardboard frame people can use to assemble their own Scrappy Filtration unit incorporating their own box fan and filter.

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