

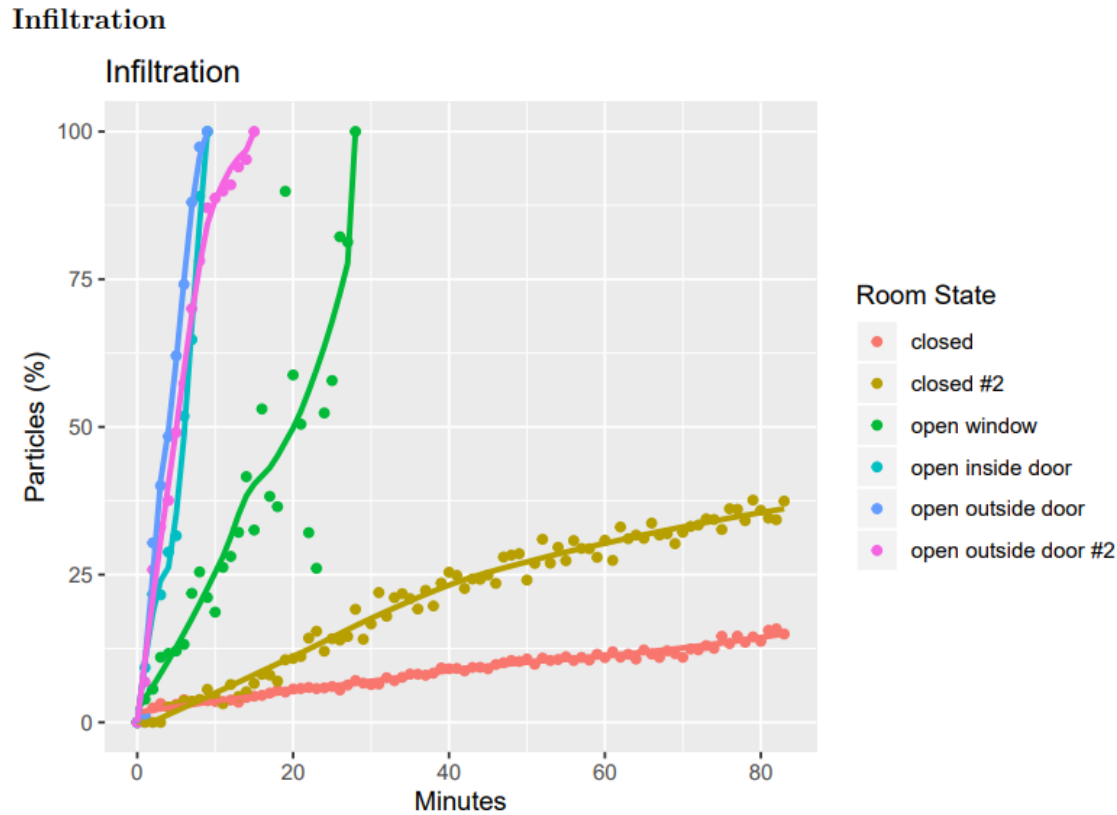
Making a Box Fan Filter



DEPARTMENT OF
**PUBLIC HEALTH &
HUMAN SERVICES**

Outside Particle Infiltration

(Small or medium sized room)



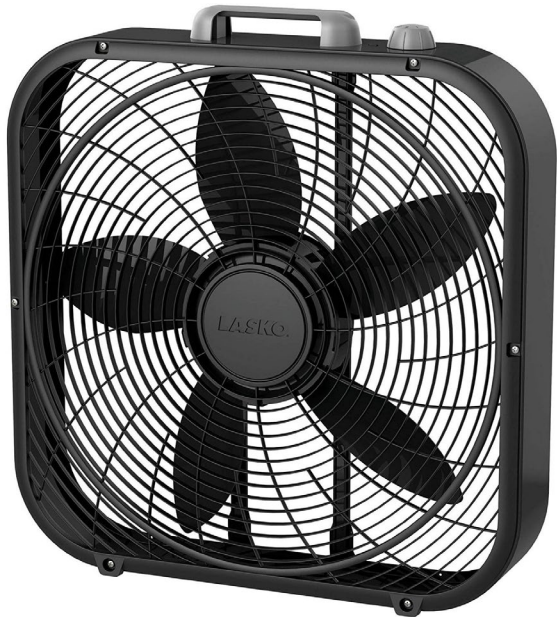
Depending on how leaky your house is, it can take 3.5 to 10 hours for particle levels to reach outside levels if doors and windows are closed.

Leaving a window open for 25 minutes or a door open for 10 minutes accomplishes the same thing.

Graeme Carvlin, Filter Fan Analysis Summer 2018, Puget Sound Clean Air Agency, 2018

Materials Needed

1. Box Fan
(2012 or newer for safety)



2. Furnace Filter
(MERV 13 or higher)



3. Duct Tape, Bungee Cord, or 3D clip*
(*3D Blueprint for clip in file)



Contact: Mary Anderson, Montana DPHHS Wildfire Smoke Coordinator

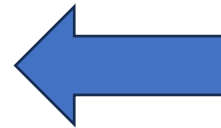
AirQuality@mt.gov



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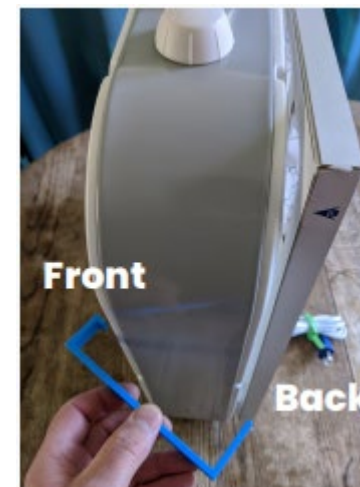
STEP 1

Place filter on back (air intake side) of the fan.



STEP 2

Use duct tape, bungee cords, or clips to attach the filter securely to the fan.



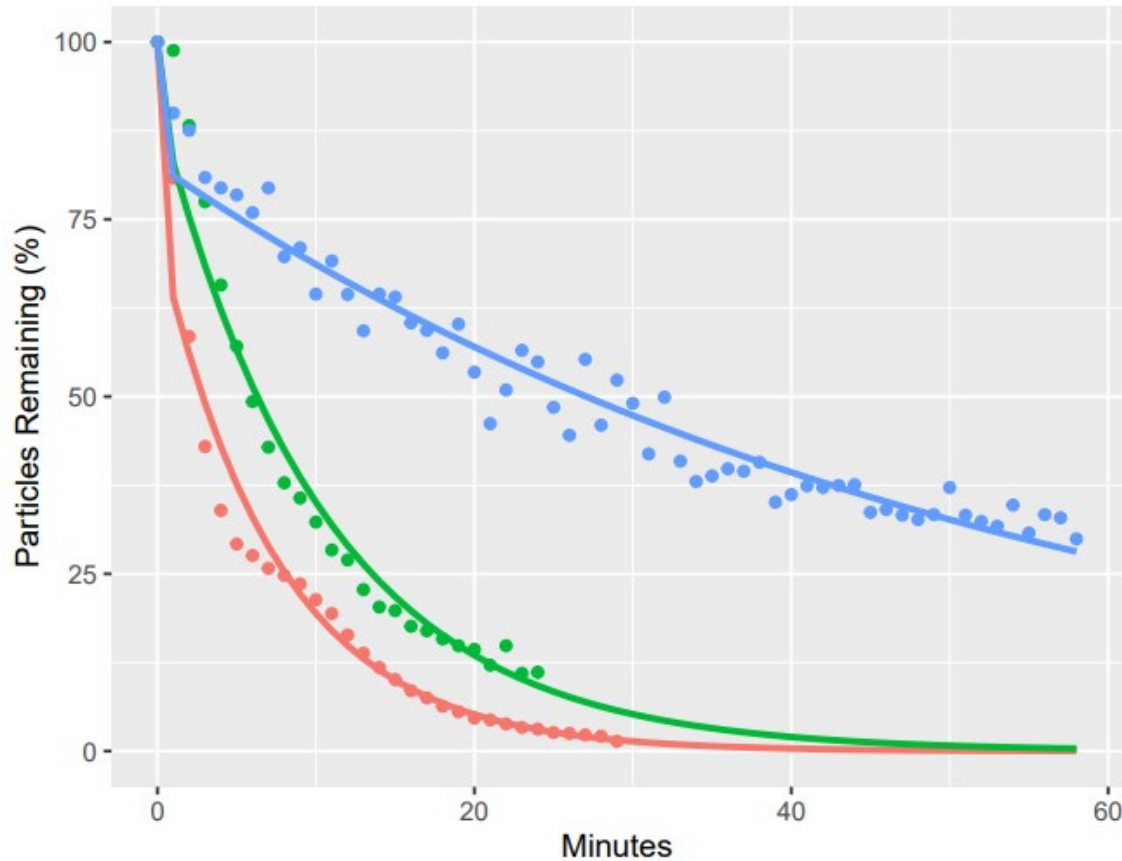
STEP 3

Place in area away from obstacles and turn the fan on.

Filtered Air



How Effective are Box Fan Filters?



Room Size

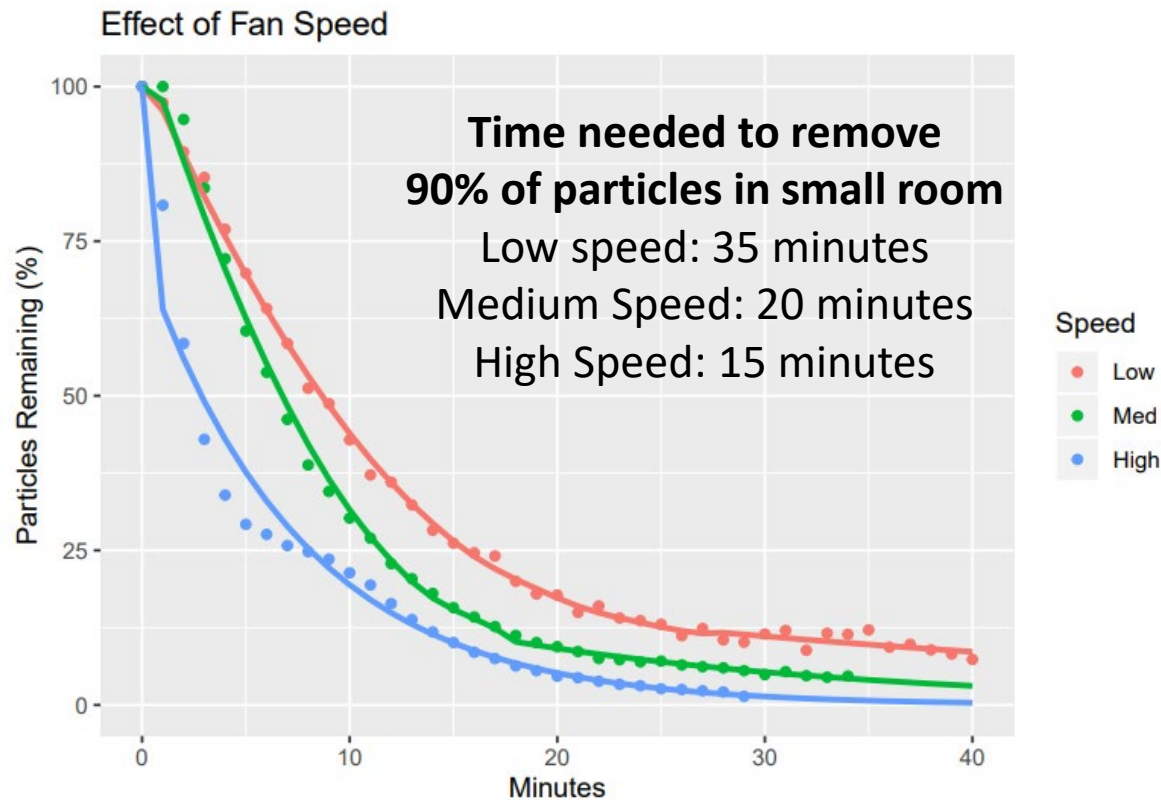
- 12x12ft
- 12x18ft
- 20x35ft

Time needed to filter 90% of particles

- 12x12 room: 15 minutes
- 12x18 room: 25 minutes
- 20x35 room: 2 hours

Graeme Carvlin, Filter Fan Analysis Summer 2018, Puget Sound Clean Air Agency, 2018

Important Tips When Using Fan



- **Use the fan for at least 15 minutes when needed.**
- Position fan in middle of room away from walls, drapes and dusty spaces.
- Use fan in room that you spend the most time in.
- Close all doors and windows when fan is in use.
- If in a larger room, put the filter near you so the air around you is clean (if may not adequately clean a larger room).

Cautions



Follow Fan Safety Guidelines

- Do not leave fan unattended around children
- Do not run fan when you aren't home or when you are sleeping
- Do not run fan around water
- If the noise of the fan is disruptive (like in a classroom), try to run on the low setting