



Sustainability: Draft Finder

Learners will improve the energy efficiency in their homes by creating a draft meter and draft stopper.

Learners will...

- Create an instrument to measure drafts in their homes
- Measure the drafts in their homes
- Design a draft stopper and test its efficacy



Instructions

1 Before starting, gather a few materials to make your draft meter. You will need a pencil, tape, and plastic wrap. Alternatively, if your household does not use plastic wrap, use parchment paper or a thin linen cloth like cheesecloth.

2 Introduce the idea of drafts to your learner.

Guiding Questions: Have you ever felt cold air come through a closed window or door? How about during the summer when you're outside? Why do you think that happens?

3 Ask your learner to think about how your heating or cooling system reacts to cold air entering or escaping. Older learners can be guided to think about how that affects the energy used in your home.

Guiding Questions: What do you think the heater does when cold air comes into the house? Does the heating system require more energy to make the room warm when cold air comes in? Do you think we can save that energy somehow?

4 The challenge is for your learner to identify drafts in their home and try to stop the drafts to save energy. In order to accomplish this, they'll need to build a draft meter. Professional draft meters exist, but they will build their own.

5 Instruct your learner to cut a piece of plastic wrap to roughly 5"x10" and attach the short end to their pencil using tape so that the plastic wrap flows freely beneath it.

6 Equipped with their new draft meter, challenge your learner to find the strongest draft in your home. Remind them to check places other than windows and doors for drafts.

Older students can assign numbers to their draft findings and record them on a sheet of paper.

7 Once they've identified the strongest draft in their home, assist your learner in creating a draft stopper and place it in the drafty spot. (See pages 4-6 for instructions).

8 Finally, have them re-test the area for drafts using their draft meter.

Did it work? Share your draft stoppers with us using #designtogether and tag us!



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Background

Drafts happen where there is space for air to travel where we don't want it to. For example, a window whose frame has changed with the weather will have gaps that allow for cold air to flow inside during the winter and air conditioned air to flow out during the summer. This lack of barrier between inside and outside air forces heating and cooling systems to work harder than they have to in order to keep homes at the right temperature.

Ultimately, this is a sustainability issue because the heating and cooling systems are wasting energy that could be solved by blocking the draft.

Creating a Draft Stopper

The purpose of a draft stopper is to stop the flow of air into or out of a space where it is unwanted. You can make them out of almost anything, but the next three pages have examples of a few and instructions on how to make them!



Dry Goods Stopper

Best For Windows

Dry goods (rice, beans, walnut shells, etc.)

A fabric covering (pillow case, old sheets, old blue jeans, knee high socks, etc)

Scissors

Sewing kit/Fabric Glue/Stapler

1. Grab your fabric and cut the length to the measurement of the window and the width to around 4 inches.
2. Sew, glue, or staple one short end and both long ends shut.
3. Stuff the fabric with your dry goods until full. The point is to leave very little space for the wind to flow through.
4. Sew, glue, or staple the last short side closed
5. Place on the inside of your window!



A Pool Noodle/Foam Stopper

Best for Doors

Pool noodle or other cylindrical foam

A fabric covering (old sheets, blue jeans, etc.)

Scissors

Sewing kit/Fabric Glue/Stapler

1. Grab your foam and cut it to the width of the door, then depending on the thickness of your foam either cut a second a piece of foam to the same length or slice your foam in half longways.
2. Grab your fabric and cut the length to the measurement of the door width plus the height of your foam. For the width measure the thickness of your door and add it to twice the width of your foam. This way the fabric will fold around the foam and still leave room for the door between them.
3. Sew, glue, or staple one short end and both long ends shut.
4. Stuff the fabric with your foam.
5. Sew, glue, or staple the last short side closed. Optionally, you can also sew your foam pieces in place so they don't move around when they're not under the door.
6. Slide under your door!



A Cat Litter Draft Stopper

Most Versatile

Cat Litter

A fabric covering (pillow case, old sheets, old blue jeans, knee high socks, etc)

Scissors

Sewing kit/ Fabric Glue/ Stapler

1. Grab your fabric and cut the length to the measurement of the window/ door and the width to around 4 inches.
2. Sew, glue, or staple one short end and both long ends shut.
3. Stuff the fabric with your litter until full. The point is to leave very little space for the wind to flow through.
4. Sew, glue, or staple the last short side closed.
5. Place on the inside of your window or lean against the bottom of your door!