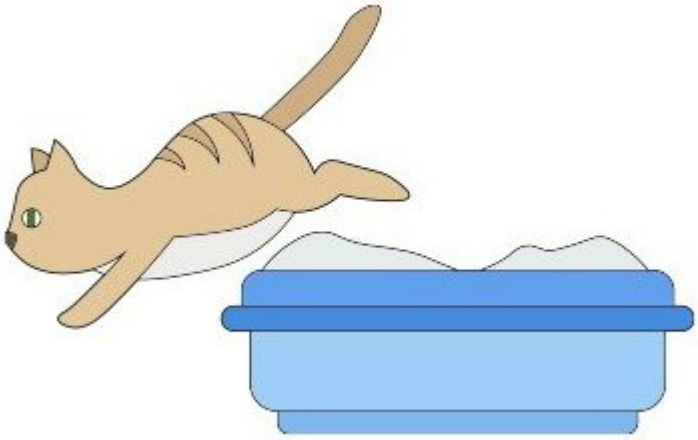
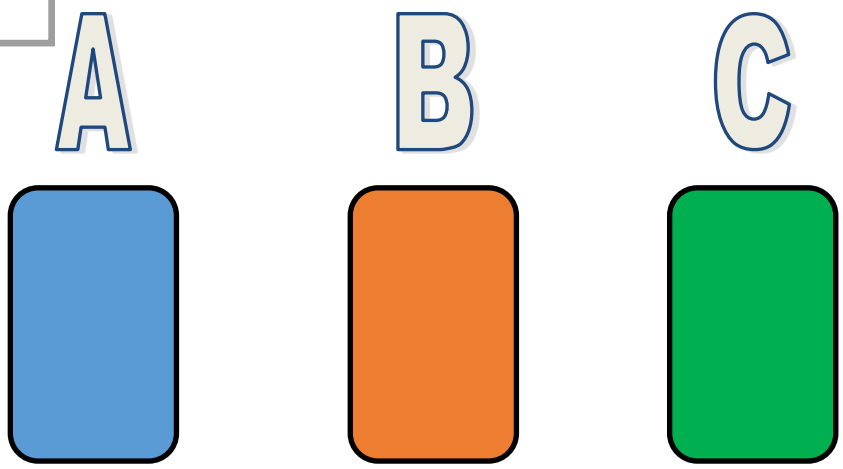
Litterbox Escape!

For this experiment, your cat will need a leash!

Can you tie a string around your cat?





Test how your cat moves through different materials. Put your cat in one end of a material “litterbox” and drag it through.
What happens to the material? To the cat?
Try dragging the cat through at different speeds– does it make a difference if the cat moves fast or slow?

How do the different materials change what happens?
Which is more messy?
Now try the wet test!

The Wet Test

Put your cat in a cup of water and bring it to a bowl of material.

Pull out the car, and dunk it in the bowl– pull it back out.
Is anything different from when the cat was dry?
Try again with different materials! What material would make the cleanest litter?
What material might absorb the most liquid?
Clean off your cat and clean up any spilled litter!

The Science

Cat litter is intended to contain a cat's waste by being absorbent and bonding with the liquids, but sometimes it can be messy and stick to the cat.

Moving through the materials shows a few things– how **dense** is the material? The cat will sink into low-density materials, but stand on top of higher densities.
It also shows **friction.** When objects rub against each other, they create friction. Overcoming friction takes energy– so the harder it is to pull your cat across or out of the litter, the more friction you have to overcome.
Which material slows down the cat the most?

Friction will also cause some materials to stick to your cat. Is anything stuck to it when you pull it out?
When you add water, it begins bonding with some of the materials and being absorbed. This increases friction and makes it more likely material will stick to your cat. **Adhesion** is when the water causes something to stick.
Which materials stick the most? Would they make good litter or bad litter?