I have riddle for you:

Draw Giant' ?'

What do a fish, a human, and a gallon of paint have in common?
…
Stumped?

Draw FISH, HUMAN, PAINT CAN

Draw STICK FIGURE SHRUGGING W/ ? ABOVE HEAD

All three may contain toxic chemicals known as polychlorinated biphenyls, more commonly called PCBs.

Draw TOXIC CHEMICAL SIGN; spell POLYCHLORINATED BIPHENYL*; spell PCBs*

But what are PCBs?
Polychlorinated biphenyls are composed of 2 carbon rings with as few as one and as many as 10 chlorine atoms attached, which means there are 209 different types of PCBs known as congeners

Draw BIPHENYL RINGS with text below ('BI'=2; 'PHENYL' = 6-CARBON RING); draw ONE CHLORINE ATOM, then ANOTHER up to TEN CL ATOMS with text below ('POLY'=MULTIPLE; 'CHLORINATED'= TREATED WITH/HAVING CHLORINE) spell 209 FORMATIONS; spell CONGENERS

PCBs were first discovered as a byproduct of coal tar and then synthesized in laboratories in the latter half of the 1800s. Depending on how many chlorine atoms are attached PCBs can be oily or resemble honey

draw COAL TAR with text below (1865: PCBS DISCOVERED AS A BYPRODUCT OF COAL TAR); draw BEAKER with text below (1880s: PCBS SYNTHESIZED IN LABS); draw OIL and HONEY

PCBs have some marvelous chemical properties that make them great utility players in commercial and industrial settings.
They are denser than water, meaning they'll sink and are hydrophobic and lipophilic, meaning they do not easily dissolve in water, but do in oils and fats.
PCBS are fire-resistant and are great at conducting electricity. Additionally, PCBs do not break apart or degrade easily.

draw BASEBALL DIAMOND; BEAKER W/ WATER ON TOP & PCB ON BOTTOM at 1st, 2nd = FLAME W/ SLASH ON IT, 3rd = LIGHTNING BOLTS, home= SPINNING CLOCK

PCBs were incredibly useful in making more stable and powerful capacitors and transformersto power our everyday lives, brighter paints, and more water-resistant caulks, just to a name a few applications.

Draw CAPACITOR, TRANSFORMER, OPEN PAINT CANE, CAULK GUN

But, here is the catch. As the production and use of PCBs increased in the 1900s, the darker side of the chemical came to light.	*BACKGROUND becomes black/grey; draw SCARY FACES on capacitor et al.*
The qualities that make PCBs great for many uses also make them lethal to the environment and to us. They bind to anything not water, whether it is sediment or animal tissue. And they are chemically stable, so they do not breakdown or degrade for long periods of time.	*Draw DIRT, and FISH; then draw PCBS attaching to both; draw SPINNING CLOCK*
As they relate to humans and other organisms, PCBs are likely carcinogenic, or cancer-causing. In addition they can afflict the whole body including the digestive, reproductive and nervous systems, and can cause rashes.	*Draw HUMAN; with TEXT, list effects (CANCER, DIGESTIVE, REPRODUCTIVE, NERVOUS SYSTEMS, RASHES) and draw HIGHLIGHTED BODY REGIONS in tandem*
But how do PCBs get from their initial application, to the environment, and ultimately to us?	*Draw TRANSFORMER, ARROW with "?" above, PIC OF ENVIRONMENT, ARROW with "?" above, HUMAN*
PCBs enter the environment through accidental spills, like a broken transformer, pouring paint down the drain or even renovating your bathroom and dumping the old caulk in the landfill.	*Draw TRANSFORMER w/ LEAK, SPILT PAINT CAN, LANDFILL w/TOILET-TUB-TILES*
Water is a primary mover of PCBs as it can re-suspend PCBs that are bound to sediment or other oils and transport them wherever the water is moving to. The largest amounts of PCBs are typically moved during storm events.	*Draw DIRT w/PCBS, then WATER w/direction arrows, PCBS AND DIRT BITS IN WATER, then PCBS deposited in new location. Then draw STORM CLOUDS & HEAVY RAIN*
Organisms, like fish, in the water take in PCBs through contact and consumption of sediments and other organisms with PCBS in them. Each time a fish eats another fish it accumulates more PCBs. The concentration of PCBS is magnified up the food chain, with larger organisms, like a catfish, eagle, or a human having a much higher concentration than the organisms on the lower end of the food chain.	*Draw CATFISH w/open mouth, PCBS entering mouth and gills. Then CATFISH eats SMALLER FISHES, CATFISH GETS REDDER. Then draw EAGLE, HUMAN that are very red and draw SMALL FISHES, BUGS, PLANTS that are barely red*

You don't eat fish you say? PCBs can be accumulated through eating contaminated livestock or crops, soil contact, dust inhalation, or water contact and consumption. Typically, these methods of accumulation are much lower in concentration since there is little to no magnification like there is for fish consumption.	ERASE food web, then draw COW, CORN, KID IN DIRT, DUST CLOUD, and KID IN RIVER. Then draw each with very little red.
By the time the Environmental Protection Agency severely restricted the production of PCBs in 1977 over 1.5 billion pounds were produced or roughly 150 adult elephants. That does not mean PCBs are not produced today. A product is considered to be PCB-free if it has less than 50 parts per million. To put that into perspective, the USFDA requires foods that are labeled gluten-free to be under 20 ppm.	Draw EPA logo, PCBS with CIRCLE-CROSS on top. Then draw ELEPHANT X150 (or 150 elephants). Draw PCB-FREE logo = 50 PARTS PER MILLION
This means it is not just a legacy issue that will go away. For example, two current sources of PCBs that can enter the environment today are….Certain pigments/dyes (bright colors), railroad transformers	*Draw PAINT CAN, RAILROAD CAR*
But WHAT CAN YOU DO? Avoid purchasing food or cleaning products with dyes properly dispose of used motor oil	*Text, WHAT CAN YOU DO?* *Draw SOAP W/ 'DYE-FREE' on it* *Draw MOTOR OIL DISPOSAL CAN*
Know what you can and can't catch, keep an eye out for Warning sides at public access points along the waterway. If you do want eat the fish you catch, here are some precautions: Catch smaller fish, they are typically younger and have accumulated less PCBs Remove the skin, organs, and fat from the fish And when you cook it, avoid cooking it in fats or oils and let the fats drain from the fish fillet.	*Draw DEQ/VDH WARNING SIGN* *Draw FISHERMAN W/ LG FISH , FISHERMAN W/SM FISH, then draw X over LG FISH* *Draw FISH CROSS SECTION W/ARROWS POINTING TO SKIN, FAT (and text that says what it is)* *Draw BUTTER and OLIVE OIL with X's through them.*

Finally, attend public meetings hosted by your state environmental agency, to make you voices heard loud and clear.

For more information on PCBs and other pollutants, visit the Virginia Department of Environmental Quality's website AND the Virginia Department of Health's websites.

Draw PRESENTER LISTENING TO PERSON STANDING AMONGST SITTING CROWD

Draw DEQ and VDH Logos, then TEXT beneath with URL's (bit.ly/…)