



Rocket tub boats



What you need:

BAKING SODA
WHITE VINEGAR
NAPKIN
PLASTIC BOTTLE
STRAW
MODELING CLAY OR GLUE
NAIL

JUST
CHUGGING
ALONG...

What to do:

HAVE AN ADULT POKE A HOLE IN THE BOTTOM OF THE BOTTLE WHERE IT WOULD TYPICALLY REST WHILE STANDING UPRIGHT. INSERT 1IN (2.5CM) OF THE STRAW INTO THE HOLE. IT SHOULD FIT SNUG. SECURE ANY GAPS WITH THE CLAY OR GLUE. CUT THE LENGTH OF THE STRAW OUTSIDE THE BOTTLE TO 3-4IN (7-10CM). OPEN UP THE NAPKIN AND POUR ABOUT ONE TABLESPOON OF BAKING SODA INTO ITS CENTER. ROLL UP THE PAPER TO ENCLOSE THE BAKING SODA INTO A TINY PACKET THAT CAN FIT INTO THE BOTTLE. TURN THE BOTTLE SIDWAYS, AND COVER THE STRAW END WITH YOUR FINGERTIP WHILE YOU POUR ABOUT 1 CUP OF VINEGAR INTO THE BOTTLE. CAREFULLY INSERT THE BAKING SODA "PACKET" INTO THE BOTTLE WITHOUT LETTING IT FALL INTO THE VINEGAR AND PLACE THE CAP TIGHTLY ON THE BOTTLE. ROTATE THE BOTTLE SO THE PACKET BECOMES IMMERSSED IN THE VINEGAR WHILE PLACING IT INTO THE WATER. MAKE CERTAIN TO HAVE THE END OF THE STRAW POINTED UNDER THE WATER BEFORE LETTING GO OF THE HOLE. AS THE TWO CHEMICALS REACT, THE BOTTLE SHOULD BE PROPELLED ACROSS YOUR TUB!

What's going on?

CARBON DIOXIDE GAS IS RELEASED FROM THE REACTION BETWEEN THE TWO CHEMICALS AND CAN ONLY ESCAPE THROUGH THE HOLE IN THE STRAW. SINCE EVERY ACTION HAS AN EQUAL AND OPPOSITE REACTION (THANK YOU MR. NEWTON!) THE FORCE OF THE GAS EXITING THE STRAW IN ONE DIRECTION IS EQUALED BY A FORCE OF THE WATER ON THE BOTTLE WHICH PROPELS IT IN THE OPPOSITE DIRECTION.