

USE OUR ULTIMATE LAB KIT TO MAKE YOUR OWN WATER FALL

YOU NEED:

- ✓ WATER
- ✓ PAPER TOWEL
- ✓ 2 ULTIMATE LAB KIT FLASKS
- ✓ FOOD COLORING (OPTIONAL)



ON A TABLE, PUT ONE FLASK ON TOP OF A COUPLE OF BOOKS. FILL THE FLASK 3/4 FULL WITH WATER. TAKE A PAPER TOWEL AND PUT ONE END IN THE FLASK UNTIL IT REACHES THE BOTTOM.

GET A SECOND FLASK AND PUT IT DIRECTLY ON THE SURFACE OF TABLE NEAR THE FIRST FLASK. PUT THE OTHER END OF THE PAPER TOWEL IN THIS EMPTY FLASK SO THAT IT TOUCHES THE BOTTOM TOO. CHECK BACK EVERY 15 MINUTES UNTIL THE WATER HAS "FALLEN" FROM ONE FLASK TO THE OTHER.

TRY PUTTING FOOD COLORING IN THE WATER AT THE BEGINNING OF THE EXPERIMENT AND SEE WHAT HAPPENS!

PICKING UP S.T.E.A.M.

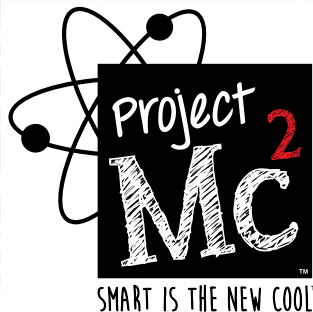
WITH SCIENCE, TECHNOLOGY, ENGINEERING, ART & MATH

HOW CAN WATER MOVE FROM ONE FLASK INTO ANOTHER THROUGH A PAPER TOWEL? SOUNDS LIKE A MAGIC TRICK, BUT IT'S SCIENCE. PAPER TOWELS ABSORB WATER BECAUSE WATER MOLECULES LIKE INTERACTING WITH THE PAPER TOWEL MOLECULES (CELLULOSE). SINCE WATER CAN FLOW THROUGH THE PAPER TOWEL, WE THINK OF IT LIKE A STRAW IN THIS EXPERIMENT. THE FLOW FROM ONE FLASK TO THE OTHER IS POWERED BY GRAVITY. WATER IS FLOWING FROM THE HIGHER FLASK TO THE LOWER ONE.

EXPERIMENT AT HOME
OR ON-THE-GO

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USE OUR ULTIMATE LAB KIT TO MAKE YOUR OWN GLITTER TORNADO

YOU NEED:

- ✓ WATER
- ✓ DISH SOAP
- ✓ GLITTER
- ✓ ULTIMATE LAB KIT TEST TUBE
- ✓ ULTIMATE LAB KIT TEST TUBE LID
- ✓ FOOD COLORING (OPTIONAL)



FILL THE TEST TUBE $\frac{3}{4}$ FULL WITH WATER, AND ADD A FEW DROPS OF DISH SOAP AND A LITTLE BIT OF GLITTER. POP THE LID ON, AND SWIRL THE TEST TUBE VERY QUICKLY. STOP AND TAKE A LOOK AT YOUR TEST TUBE. YOU'VE MADE YOUR OWN MINI TORNADO. IT'S A TEST TUBE TWISTER!!

TRY ADDING YOUR FAVE SHADE OF FOOD COLORING FOR A MORE COLORFUL EFFECT! YOU CAN ALSO EXPERIMENT TO SEE WHAT HAPPENS WHEN YOU SHAKE THE TEST TUBE INSTEAD OF SWIRL. DO YOU GET THE SAME RESULT?

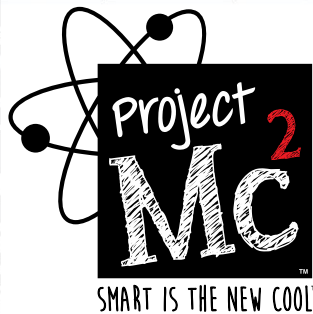
PICKING UP S.T.E.A.M.

WITH SCIENCE, TECHNOLOGY, ENGINEERING, ART & MATH TORNADOES ARE USUALLY GIGANTIC AND DESTRUCTIVE. BUT DID YOU KNOW THAT THEY CAN ALSO FORM IN WATER? WE CAN MAKE ONE BY MIXING WATER IN A TEST TUBE. WATER CURRENTS ARE DIFFICULT TO SEE. SO, WE ADD GLITTER TO VISUALIZE HOW THE WATER IS FLOWING. THE FOOD COLORING HELPS MAKE IT PRETTY.

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USE OUR ULTIMATE LAB KIT TO MAKE YOUR OWN GREEN PENNY

YOU NEED:

- ✓ PENNY
- ✓ PAPER TOWEL
- ✓ VINEGAR
- ✓ ULTIMATE LAB KIT PETRI DISH



FOLD A SMALL PAPER TOWEL A FEW TIMES SO THAT IT FITS IN THE BOTTOM OF THE PETRI DISH. POUR IN SOME VINEGAR SO THAT THE PAPER TOWEL IS SOAKED. PUT THE PENNY ON THE PAPER TOWEL AND COVER WITH THE PETRI DISH LID.

TAKE A LOOK AT THE PENNY EVERY FEW HOURS AND SEE WHAT HAPPENS! KEEP THE PENNY IN THE DISH FOR ONE DAY FOR THE BEST RESULTS.

TRY THE EXPERIMENT USING ANOTHER COIN LIKE A NICKEL OR A DIME AND SEE WHAT HAPPENS! DO YOU GET THE SAME RESULT?

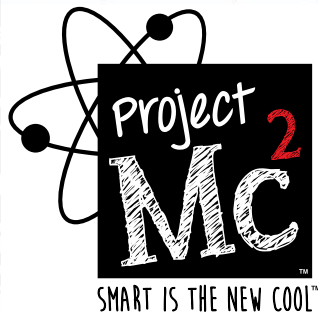
PICKING UP S.T.E.A.M.

WITH SCIENCE, TECHNOLOGY, ENGINEERING, ART & MATH THE SURFACE OF A PENNY IS MADE OF COPPER, A SHINY METAL. OVER TIME, THE COPPER RUSTS, BUT INSTEAD OF BEING A FLAKY RED COLOR LIKE IRON RUST, COPPER RUST IS GREEN! THE STATUE OF LIBERTY WAS ORIGINALLY SHINY COPPER, BUT THEN IT TURNED GREEN BECAUSE ITS SURFACE SLOWLY REACTED WITH THE AIR. THE VINEGAR IN THIS EXPERIMENT CONTAINS ACETIC ACID, WHICH REACTS WITH THE COPPER TO FORM A HARMLESS GREEN COATING.

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USE OUR ULTIMATE LAB KIT TO GO ICE FISHING!

YOU NEED:

- ✓ WATER
- ✓ A FEW ICE CUBES
- ✓ TABLE SALT
- ✓ STRING
- ✓ ULTIMATE LAB KIT JAR



FILL THE JAR 2/3 FULL WITH WATER AND ADD ICE CUBES. SPRINKLE SOME SALT ON TOP OF THE ICE CUBES AND LAY THE STRING ON TOP OF THE SALTED ICE CUBES. WAIT ABOUT A MINUTE. THEN, LIFT ONE END OF THE STRING AND SEE HOW MANY ICE CUBES YOU "CAUGHT".

HOW MANY ICE CUBES DO YOU CATCH IF YOU DON'T ADD ANY SALT? GIVE IT A TRY!

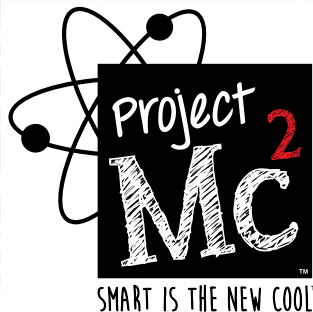
PICKING UP S.T.E.A.M.

WITH SCIENCE, TECHNOLOGY, ENGINEERING, ART & MATH FISHING FOR ICE MAY SOUND IMPOSSIBLE, BUT YOU CAN DO IT WITH SCIENCE. THE BAIT IS SALT, WHICH MELTS ICE. THIS IS THE REASON WE SPRINKLE IT ON ROADS IN THE WINTER. IN THIS EXPERIMENT, ADDING A BIT OF SALT SLIGHTLY MELTS THE ICE AT THE SURFACE WHERE YOU PUT THE STRING. SINCE WE USED SO LITTLE SALT, THE CUBE REFREEZES AND NOW THE STRING IS FROZEN TO THE ICE CUBE. IT'S HOOKED!

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USE OUR ULTIMATE LAB KIT TO MAKE YOUR OWN MORPHING STRAW

YOU NEED:

- ✓ COOKING OIL
- ✓ DRINKING STRAW
- ✓ ULTIMATE LAB KIT JAR



FILL THE JAR 1/2 FULL WITH OIL. PUT THE STRAW IN THE JAR UNTIL IT REACHES THE BOTTOM AND PUSH IT TO ONE SIDE OF THE JAR.

BRING THE JAR UP TO EYE LEVEL. LOOK AT THE STRAW AS YOU TURN THE JAR SLOWLY AND SEE WHAT HAPPENS TO THE STRAW'S APPEARANCE. HOW DOES IT CHANGE? CAN YOU EVEN MAKE PART OF IT DISAPPEAR?

SEE WHAT HAPPENS IF YOU USE WATER INSTEAD OF OIL!

PICKING UP S.T.E.A.M.

WITH SCIENCE, TECHNOLOGY, ENGINEERING, ART & MATH IF YOU HAVE EVER LOOKED AT YOURSELF IN FRONT OF A FUNNY SHAPED MIRROR, YOU MAY REMEMBER A FUNNY DISTORTED IMAGE. THIS HAPPENS BECAUSE THE LIGHT REACHING YOUR EYE HAS BEEN BENT. IN THIS EXPERIMENT, A CUP FILLED WITH OIL ACTS LIKE A LENS OR A DISTORTION MIRROR AND BENDS THE LIGHT REFLECTED OFF THE STRAW WHEN IT PASSES FROM THE OIL INTO THE AIR. SOMETIMES THE LIGHT BENDS COMPLETELY IN A DIFFERENT DIRECTION AND IT LOOKS LIKE THE STRAW IN THE OIL DISAPPEARS!

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