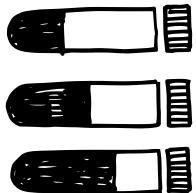


HOW

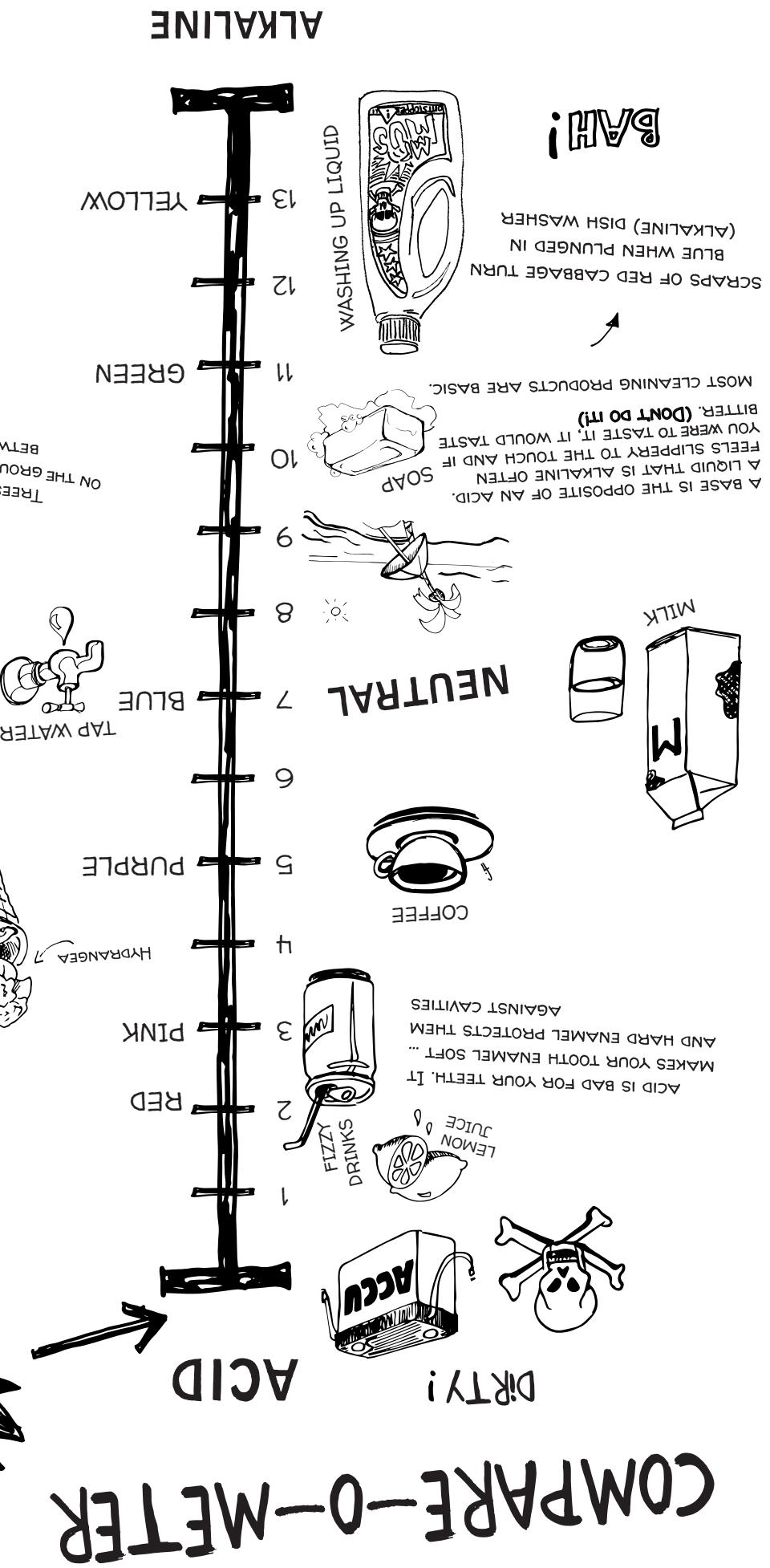


Ac/Dic

IS THE ≈ ?
AND THE ⚡ ?

EXPERIMENT
1

ALKALINE



HOW ACIDIC IS THE SOIL?

EXAMINE THE ACIDITY OF THE SOIL OR WATER IN YOUR AREA.

LEMONS AND SOFT DRINKS ARE ACIDIC, WHICH YOU CAN TASTE. BUT HOW ACIDIC SOIL? OR DITCH WATER?! FORTUNATELY, YOU DON'T HAVE TO 'MEASURE' WITH YOUR TONGUE...BUT YOU CAN WITH **red cabbage**!
A FEW FACTS: ACID IS BAD FOR YOUR TEETH. IT MAKES YOUR TOOTH ENAMEL SOFT, AND WE NEED HARD ENAMEL TO PROTECT OUR TEETH FROM CAVITIES.

HOW DOES IT WORK?

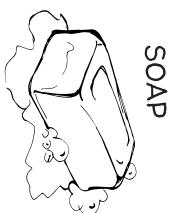
Step 1. You start by making the measuring instrument.

* You'll need: to make gauges.

EVERYTHING STARTS WITH THE QUESTION:
WHAT DO YOU WANT TO MEASURE? YOU

' SHOULD HAVE ALREADY THOUGHT ABOUT THIS.
' NICE! NOW YOU CAN GET TO WORK.

OR DISH WATER?



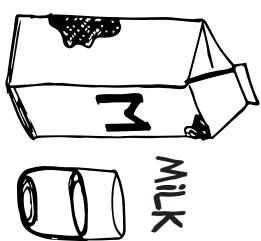
ACID SOIL OR AN ACIDIC SOIL IS A VULNERABLE SOIL. HARMFUL SUBSTANCES GATHER QUICKLY AND SEEP INTO GROUNDWATER. ACIDIC SOIL CAN ACTUALLY BE QUITE GOOD AGAIN FOR SOME PLANTS. AND, THE MORE ACIDIC THE SOIL, THE MORE BLUE HYDRANGEAS. AN ALKALINE IS THE OPPOSITE OF AN ACID. A LIQUID THAT IS BASIC OFTEN FEELS SLIPPERY AND IF YOU TASTE IT (DO NOT!) IT TASTES BITTER. MOST DETERGENTS ARE ALKALINE.

— — — — — !

Step 2. Then it's time to do research and do experiments. REMEMBER TO THINK ABOUT WHAT EXACTLY YOU WANT TO INVESTIGATE

FOR EXAMPLE.. DO YOU WANT TO EXAMINE HOW ACIDIC THE SOIL IS AND WHAT IT MEANS? DO YOU WANT TO FIND OUT WHICH DRINK IS BEST FOR YOUR TEETH?

CHECK THE COMPARE-O-METER TO FIND MORE FACTS.



Step 3. COLLECT THE MEASURED DATA IN THE WORKSHEET
* You'll need: the worksheet to write your findings

Step 4. CHECK IT WITH THE COMPARE-O-METER. THEN YOU CAN COMPARE YOUR MEASUREMENTS TO OTHERS. You'll also find lots of facts here.

PH SCALE	ACIDIC	NEUTRAL	ALKALINE
PH 0	PH 7	PH 14	

* You'll need: the worksheet
it explains how you can go out
with the homemade gauges to collect
measurements (data)

Discover how healthy your area is and what you can do to improve it!

LEMONS AND SOFT DRINKS ARE ACIDIC, WHICH YOU CAN TASTE.
BUT HOW ABOUT ACIDIC SOIL? AND DISH WATER?! LUCKILY, YOU
DON'T HAVE TO 'MEASURE' WITH YOUR TONGUE ... YOU CAN DO IT
WITH RED CABBAGE! ↗
JUST WAITING FOR YOU
AT THE SUPERMARKET!

MAKE AN ACID METER WITH MAGIC AND RED CABBAGE JUICE ...



WHAT YOU'LL NEED

- - - - - FRESH RED CABBAGE
- - - - - BLENDER
- - - - - FUNNEL
- - - - - COFFEE
- - - - - RULER
- - - - - WATERPROOF MARKER
- - - - - CLEAR PLASTIC CUPS
- - - - - SCALE



POUR TWO GLASSES OF WATER INTO THE BLENDER AND ADD 4 LEAVES OF RED CABBAGE TO. PUREE THIS AS FINE AS POSSIBLE.

PUT A COFFEE FILTER INTO THE FUNNEL AND POUR THE MIXTURE FROM THE BLENDER INTO IT. COLLECT THE LIQUID IN A BOTTLE.

FOR TESTING OF WATER OR OTHER LIQUIDS:
FOLLOW STEPS 1, 2, 3 & 4.

FOR THE TESTING OF SOIL:
FOLLOW STEPS 1, 2, 5 & 6.



DRAW TWO LINES ON ONE OF THE PLASTIC CUPS, ONE AT A HEIGHT OF 3 CM AND THE OTHER AT 6 CM. WRITE ON THE CUP WHICH LIQUID YOU ARE GOING TO TEST



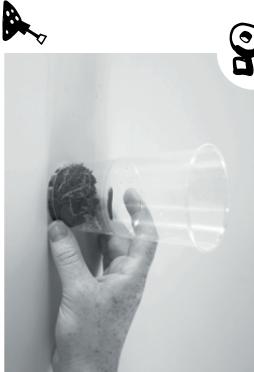
POUR THE RED CABBAGE LIQUID TO THE FIRST MARK (3CM). NEXT, POUR THE LIQUID YOU WANT TO TEST TO THE SECOND MARK (6CM)

5.

for testing soil



DRAW A LINE ON THE SECOND PLASTIC CUP AT A HEIGHT OF 6 CM. WEIGH 5 GRAMS OF SOIL AND PUT IT IN THE CUP



POUR THE RED CABBAGE LIQUID TO THE MARK AND STIR WITH A PLASTIC SPOON. WAIT UNTIL THE SOIL SETTLES BACK TO THE COLOR TO SEE.

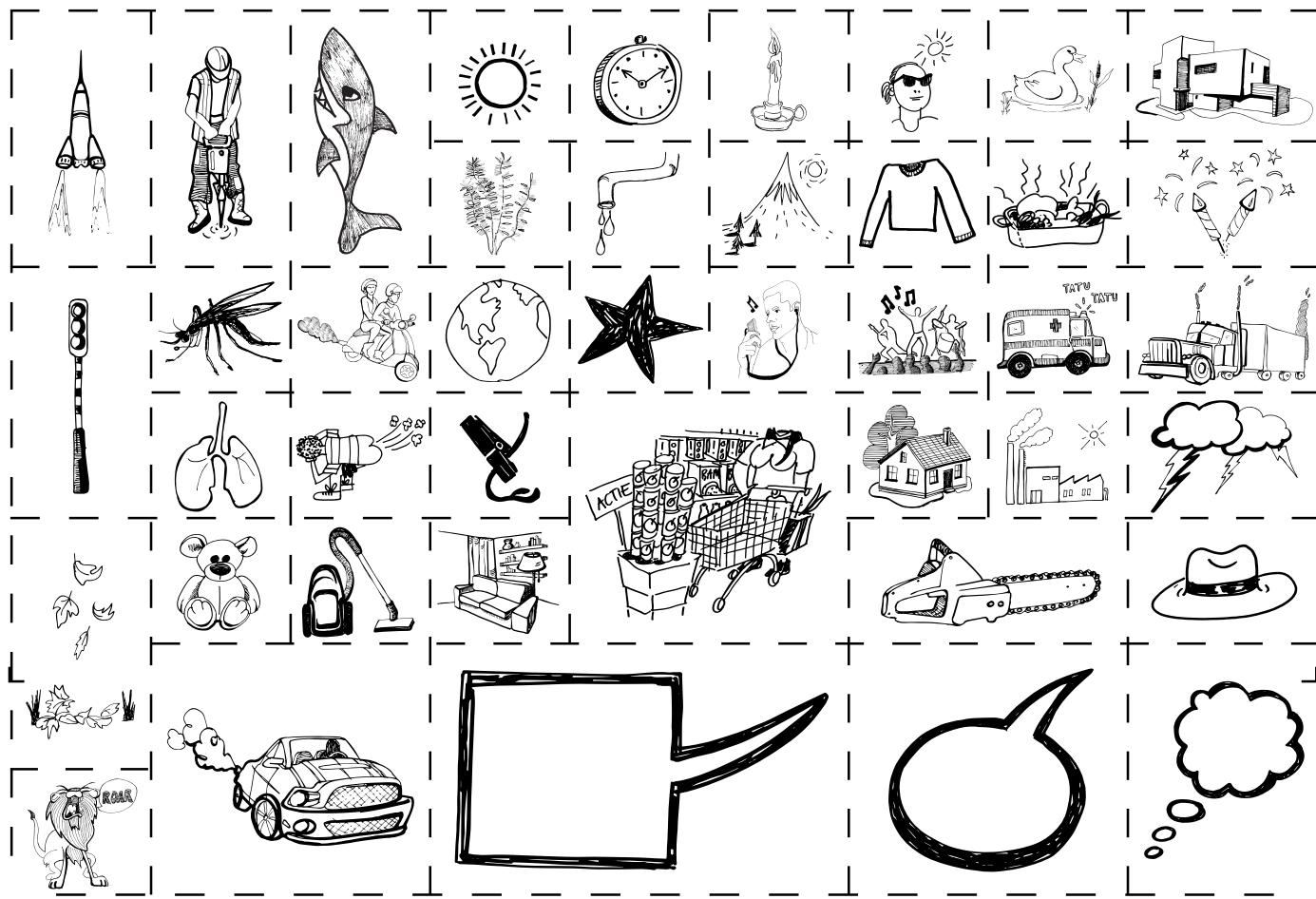
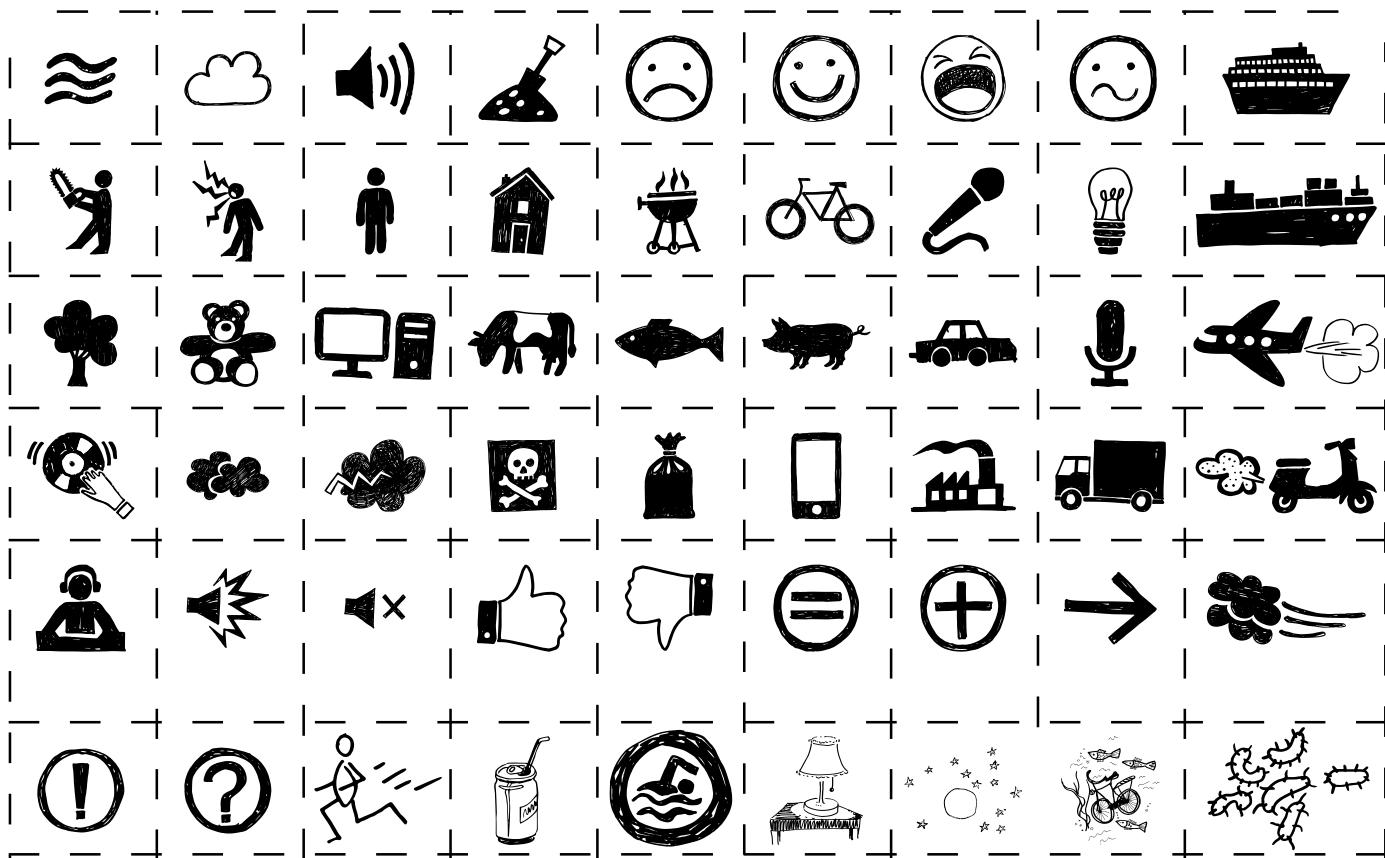
THE RED CABBAGE LIQUID CHANGES COLOR DEPENDING ON HOW ACIDIC SOMETHING IS.

DO YOUR CABBAGE LIQUID TURN... ↗

RED OR PINK? THEN THE SOIL OR WATER IS ACIDIC...
PURPLE OR BLUE? NOT VERY ACIDIC OR NEUTRAL.
GREEN OR YELLOW? THEN IT'S PRETTY ALKALINE.



USE THESE DRAWINGS IN THE "DO EXPERIMENTS" SECTION OF
YOUR WORKSHEETS TO MAKE YOUR RESEARCH EVEN BETTER!



USE THESE DRAWINGS IN THE "DO EXPERIMENTS" SECTION OF
YOUR WORKSHEETS TO MAKE YOUR RESEARCH EVEN BETTER!