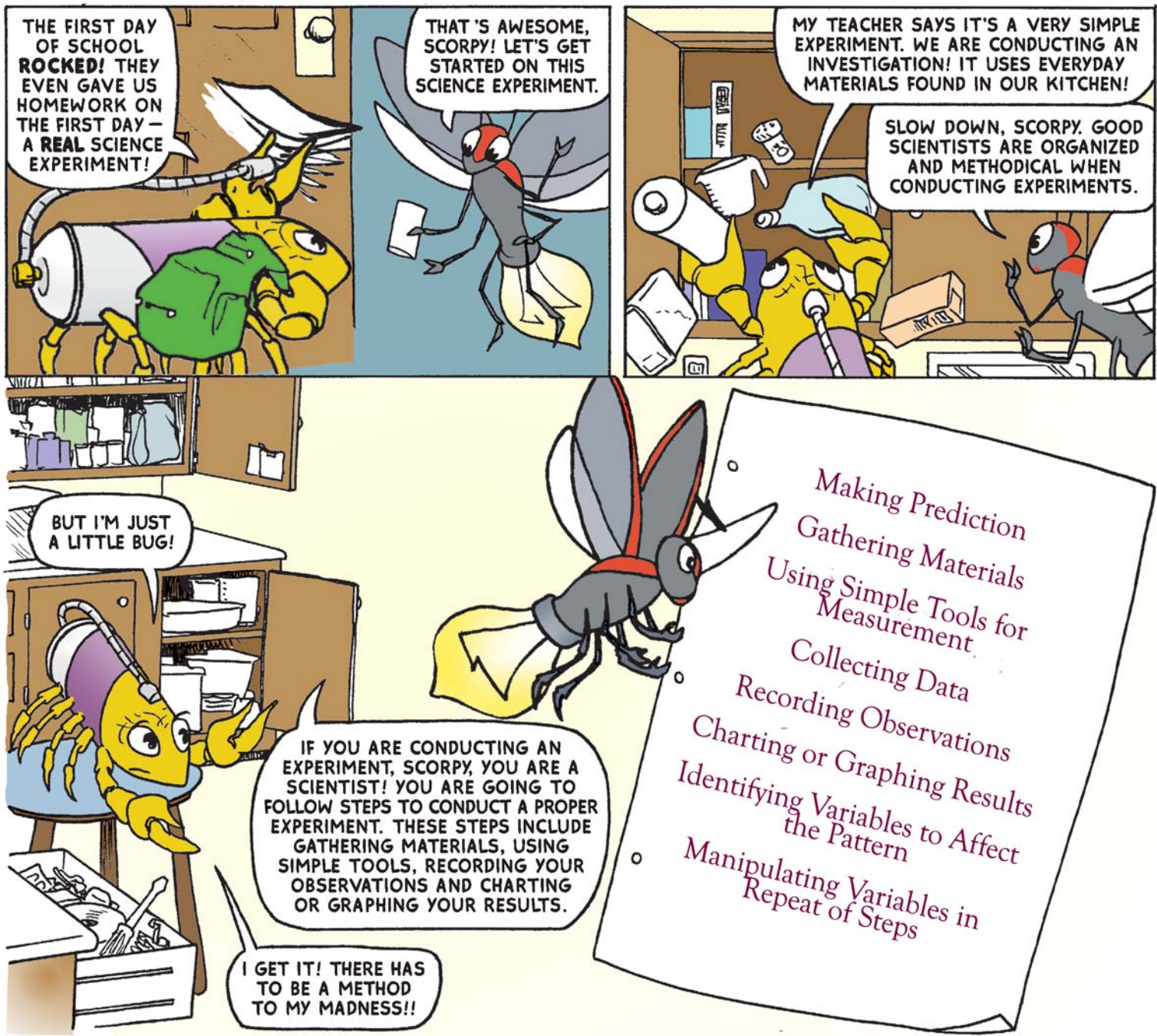
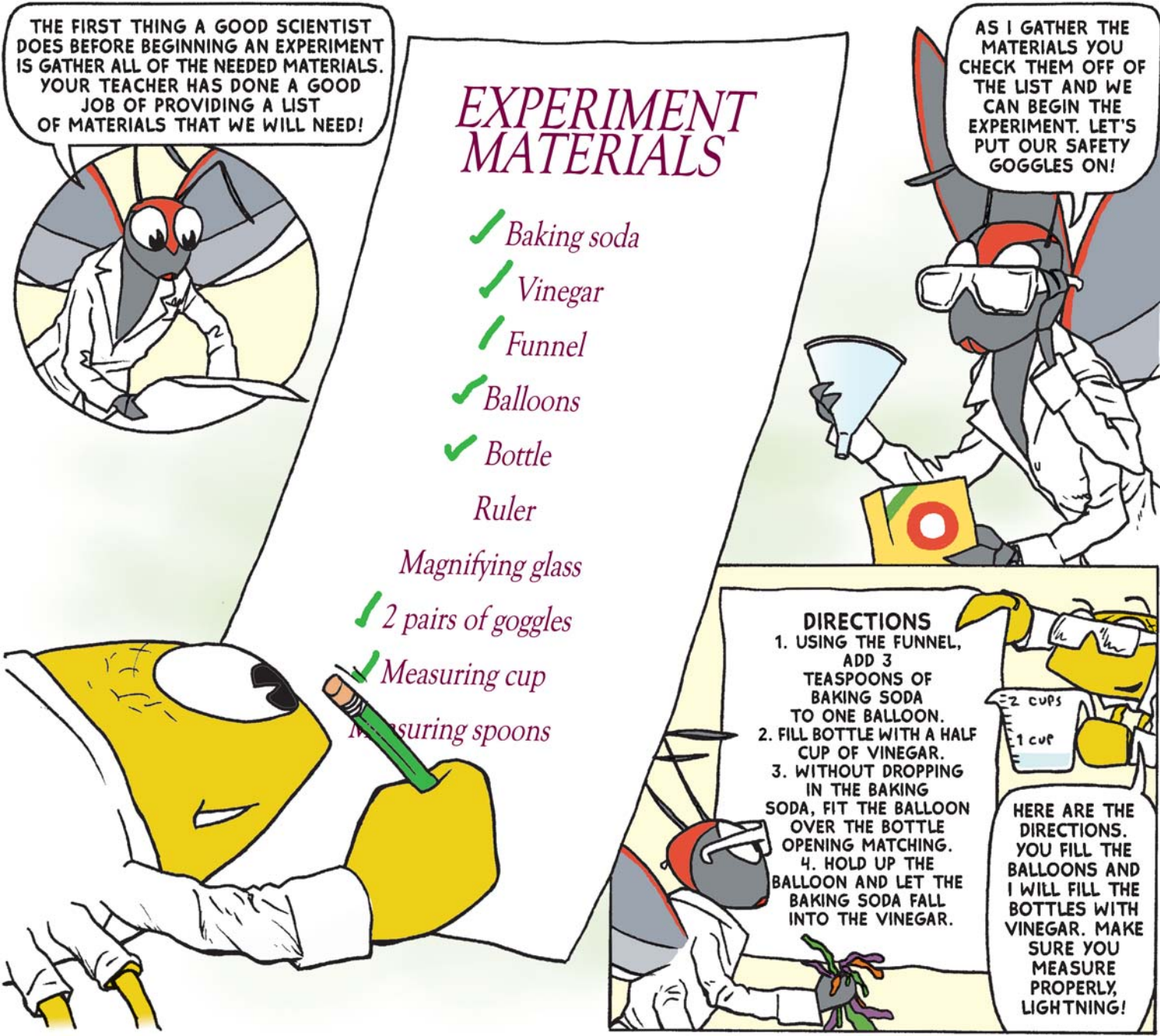
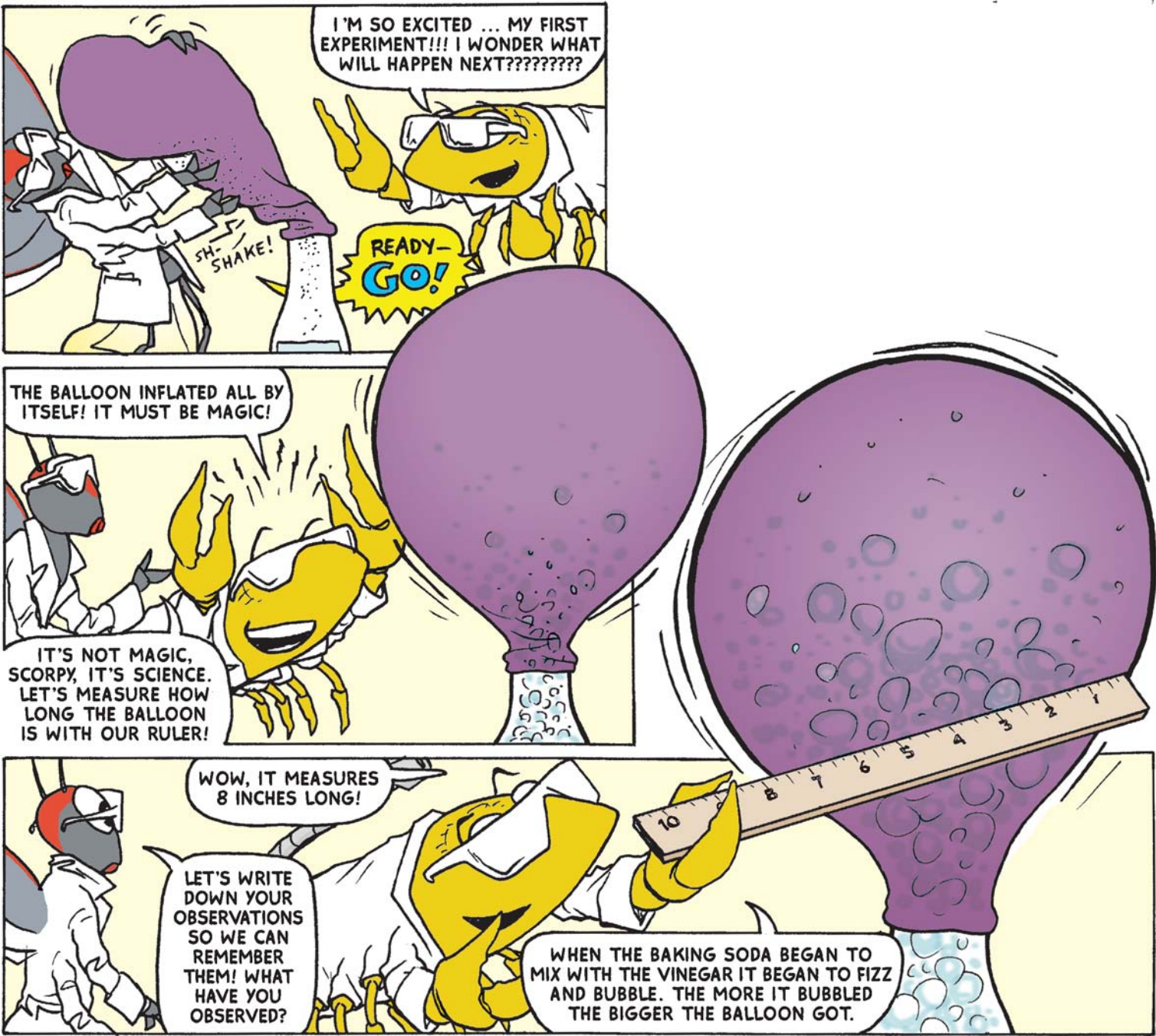
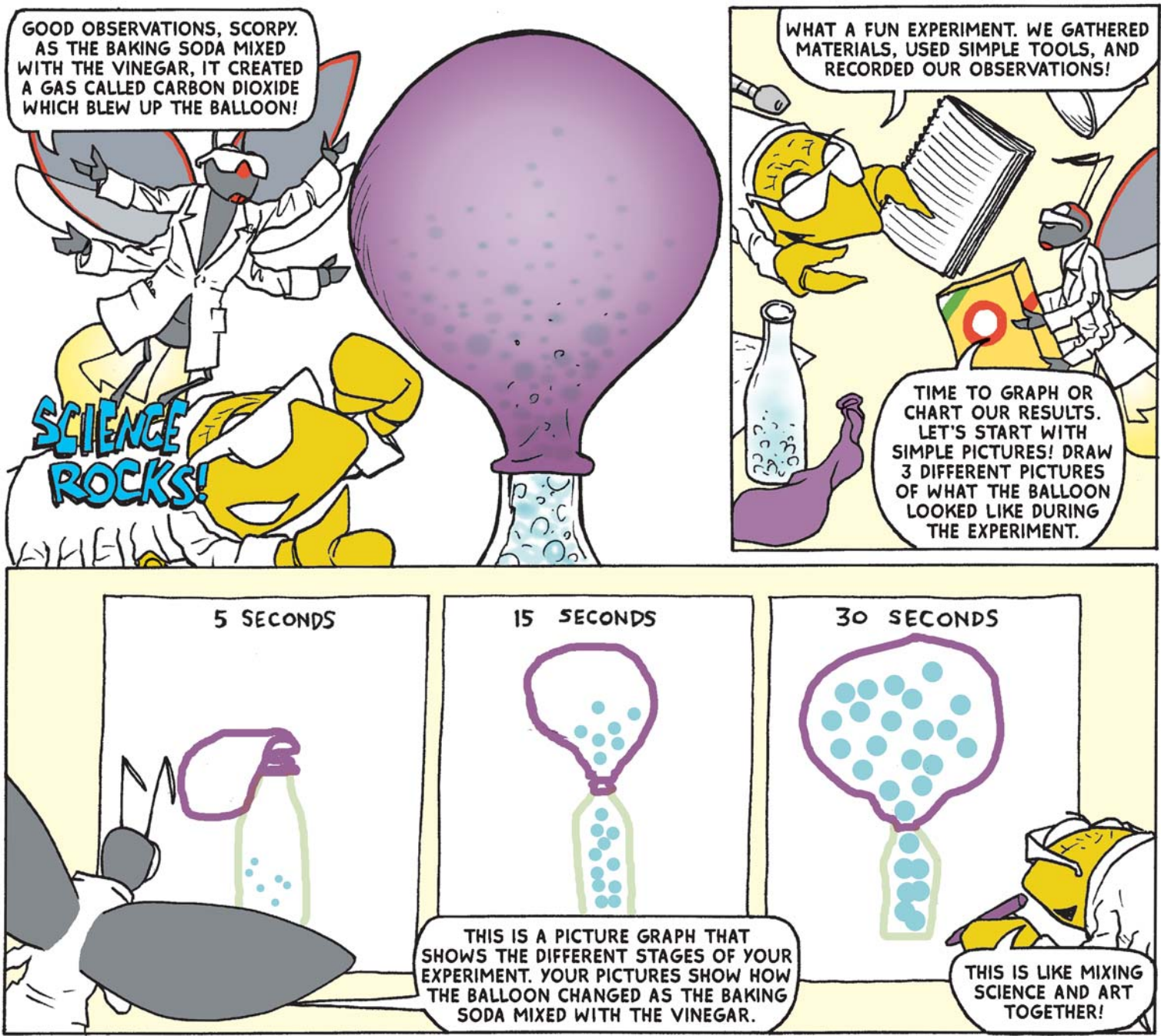
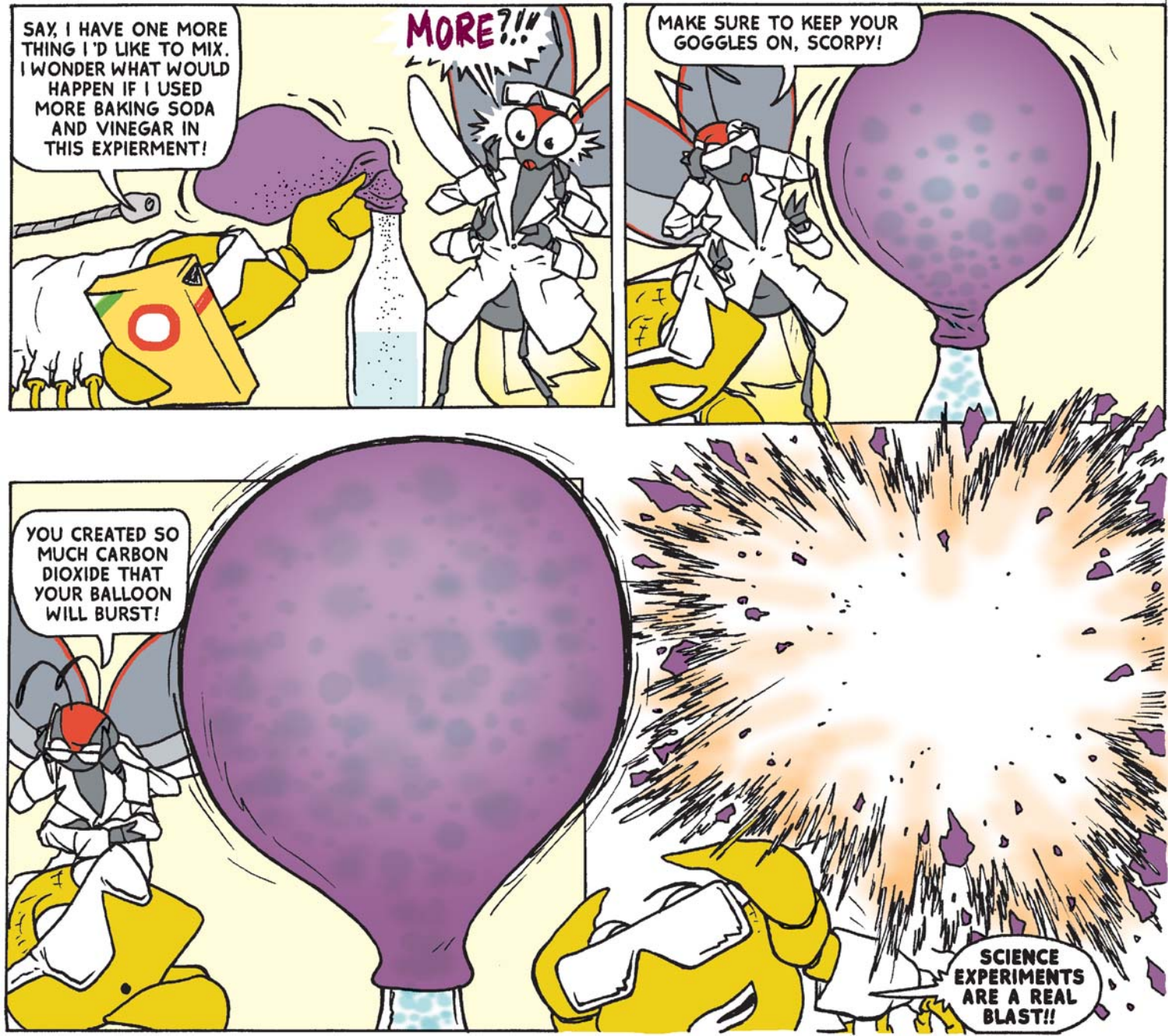
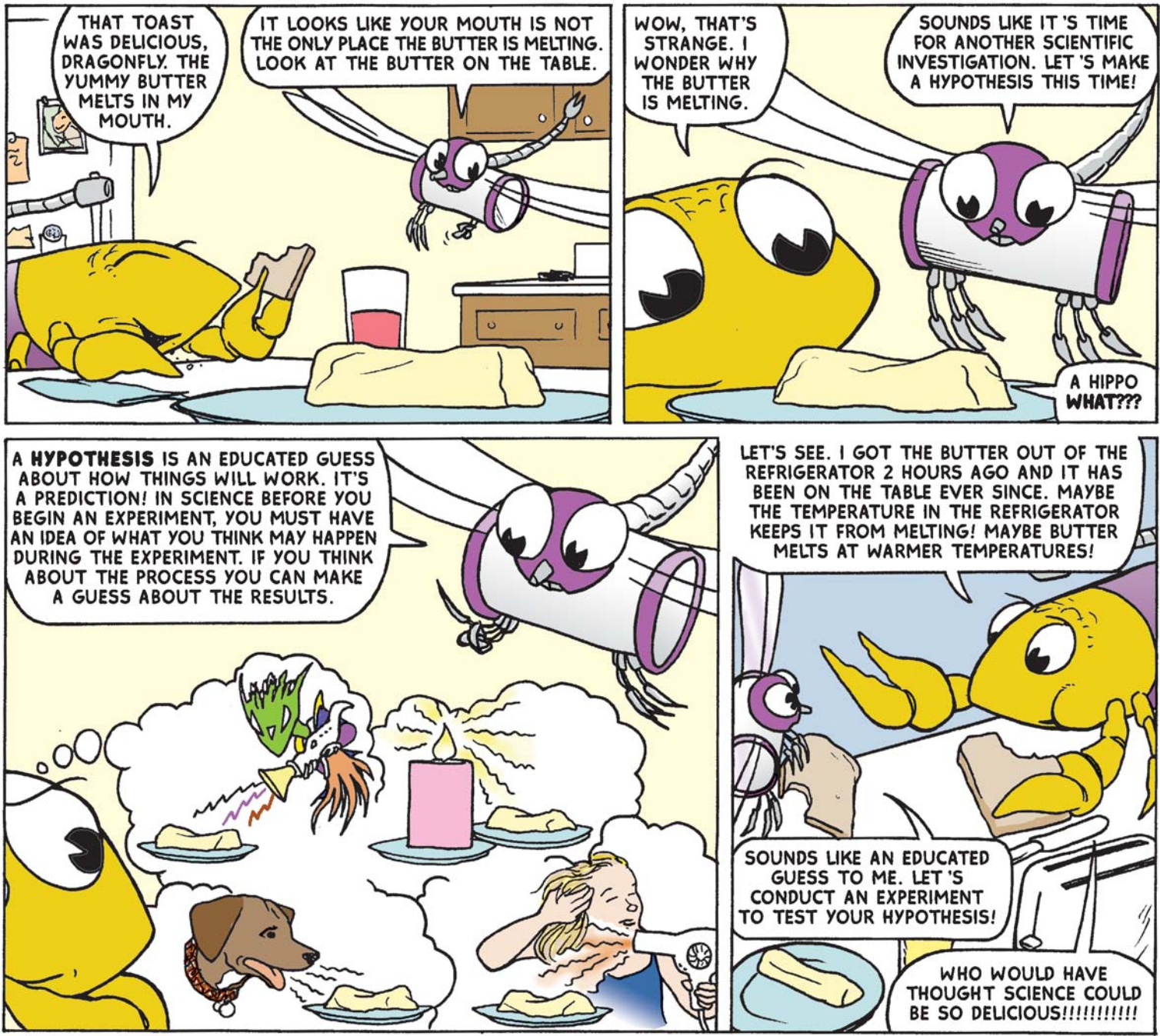

THE FIRST DAY OF SCHOOL ROCKED! THEY EVEN GAVE US HOMEWORK ON THE FIRST DAY— A REAL SCIENCE EXPERIMENT!
THAT'S AWESOME, SCORPY! LET'S GET STARTED ON THIS SCIENCE EXPERIMENT.
MY TEACHER SAYS IT'S A VERY SIMPLE EXPERIMENT. WE ARE CONDUCTING AN INVESTIGATION! IT USES EVERYDAY MATERIALS FOUND IN OUR KITCHEN!
SLOW DOWN, SCORPY. GOOD SCIENTISTS ARE ORGANIZED AND METHODICAL WHEN CONDUCTING EXPERIMENTS.
BUT I'M JUST A LITTLE BUG!
IF YOU ARE CONDUCTING AN EXPERIMENT, SCORPY, YOU ARE A SCIENTIST! YOU ARE GOING TO FOLLOW STEPS TO CONDUCT A PROPER EXPERIMENT. THESE STEPS INCLUDE GATHERING MATERIALS, USING SIMPLE TOOLS, RECORDING YOUR OBSERVATIONS AND CHARTING OR GRAPHING YOUR RESULTS.
I GET IT! THERE HAS TO BE A METHOD TO MY MADNESS!!
Making Prediction
Gathering Materials
Using Simple Tools for Measurement
Collecting Data
Recording Observations
Charting or Graphing Results
Identifying Variables to Affect the Pattern
Manipulating Variables in Repeat of Steps

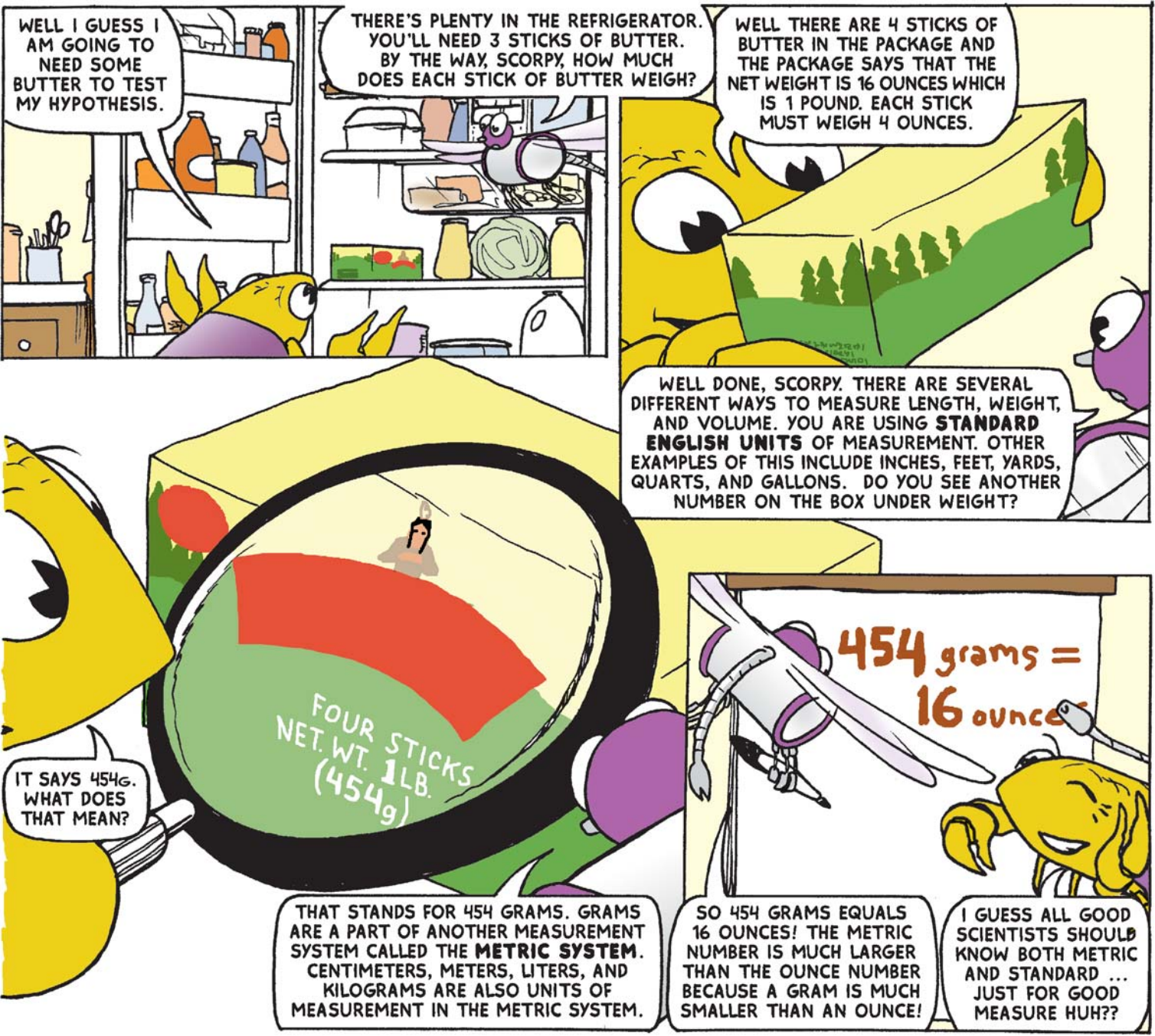

THE FIRST THING A GOOD SCIENTIST DOES BEFORE BEGINNING AN EXPERIMENT IS GATHER ALL OF THE NEEDED MATERIALS. YOUR TEACHER HAS DONE A GOOD JOB OF PROVIDING A LIST OF MATERIALS THAT WE WILL NEED!
EXPERIMENT MATERIALS
✓ Baking soda
✓ Vinegar
✓ Funnel
✓ Balloons
✓ Bottle
Ruler
Magnifying glass
✓ 2 pairs of goggles
✓ Measuring cup
Measuring spoons
AS I GATHER THE MATERIALS YOU CHECK THEM OFF OF THE LIST AND WE CAN BEGIN THE EXPERIMENT. LET'S PUT OUR SAFETY GOGGLES ON!
DIRECTIONS
1. USING THE FUNNEL, ADD 3 TEASPOONS OF BAKING SODA TO ONE BALLOON.
2. FILL BOTTLE WITH A HALF CUP OF VINEGAR.
3. WITHOUT DROPPING IN THE BAKING SODA, FIT THE BALLOON OVER THE BOTTLE OPENING MATCHING.
4. HOLD UP THE BALLOON AND LET THE BAKING SODA FALL INTO THE VINEGAR.
2 cups
1 cup
HERE ARE THE DIRECTIONS. YOU FILL THE BALLOONS AND I WILL FILL THE BOTTLES WITH VINEGAR. MAKE SURE YOU MEASURE PROPERLY, LIGHTNING!

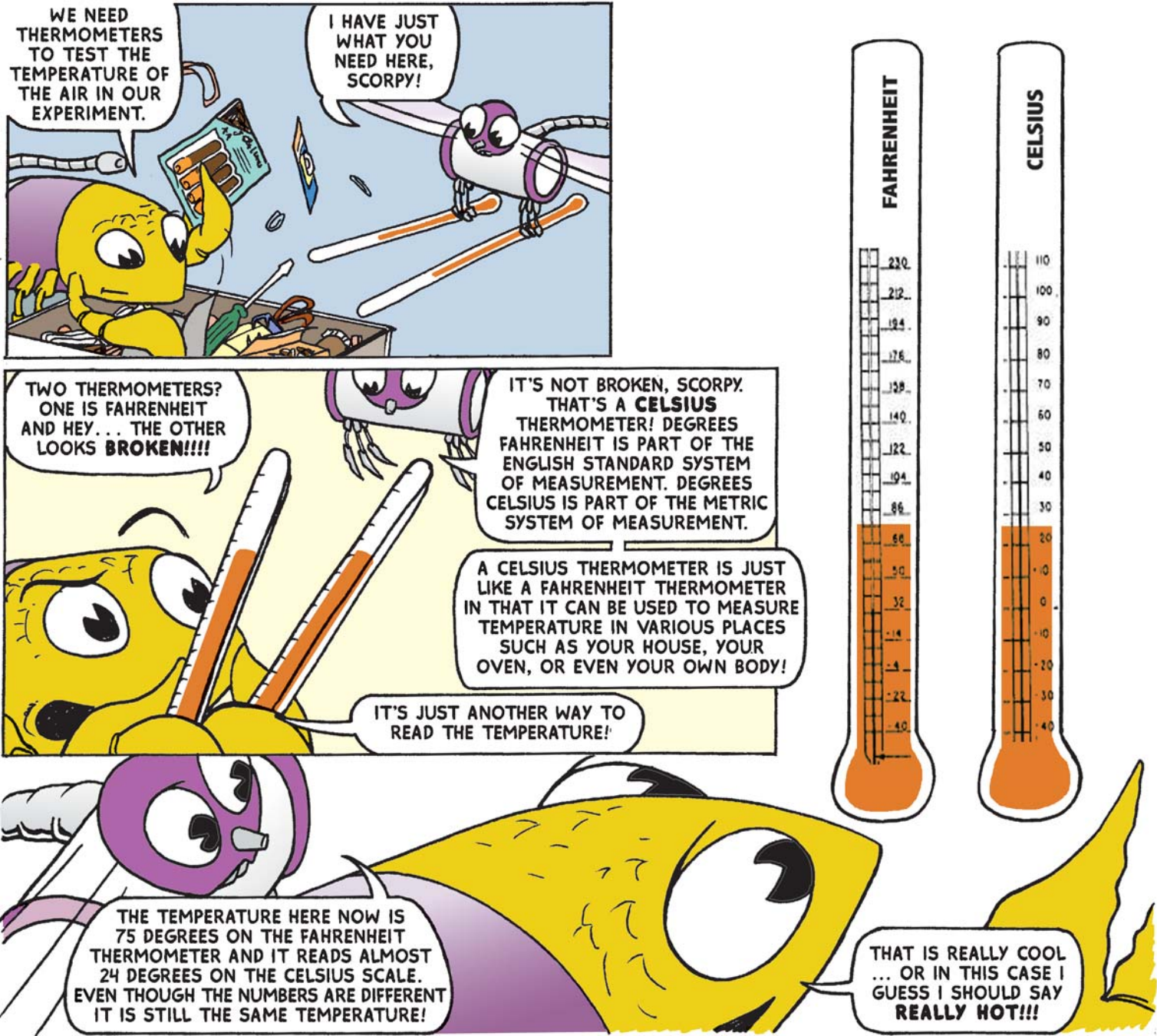

I'M SO EXCITED ... MY FIRST EXPERIMENT!!! I WONDER WHAT WILL HAPPEN NEXT?????????
SH-SHAKE!
READY-GO!
THE BALLOON INFLATED ALL BY ITSELF! IT MUST BE MAGIC!
IT'S NOT MAGIC, SCORPY, IT'S SCIENCE. LET'S MEASURE HOW LONG THE BALLOON IS WITH OUR RULER!
WOW, IT MEASURES 8 INCHES LONG!
LET'S WRITE DOWN YOUR OBSERVATIONS SO WE CAN REMEMBER THEM! WHAT HAVE YOU OBSERVED?
WHEN THE BAKING SODA BEGAN TO MIX WITH THE VINEGAR IT BEGAN TO FIZZ AND BUBBLE. THE MORE IT BUBBLED THE BIGGER THE BALLOON GOT.

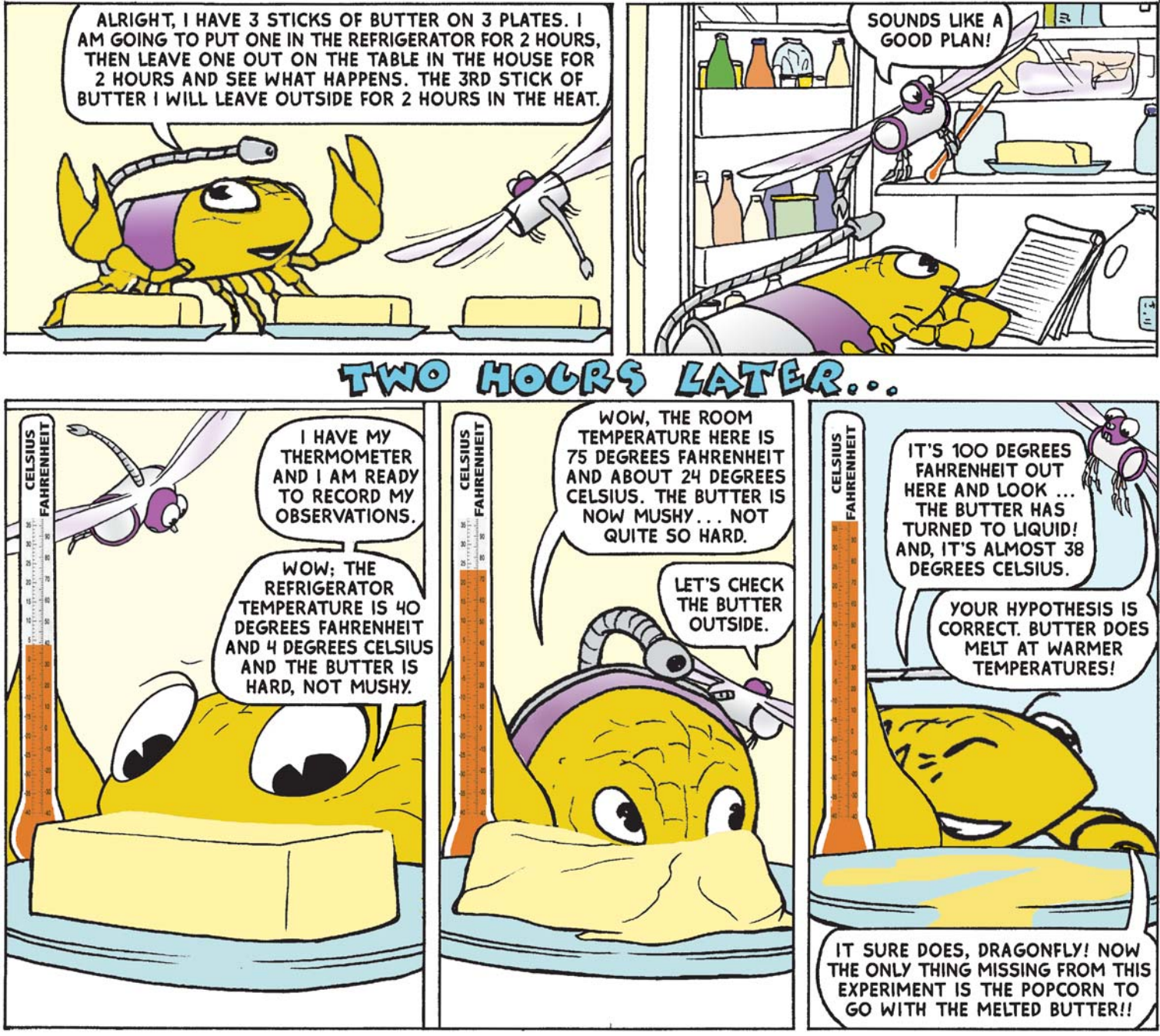

GOOD OBSERVATIONS, SCORPY. AS THE BAKING SODA MIXED WITH THE VINEGAR, IT CREATED A GAS CALLED CARBON DIOXIDE WHICH BLEW UP THE BALLOON!
SCIENCE ROCKS!
WHAT A FUN EXPERIMENT. WE GATHERED MATERIALS, USED SIMPLE TOOLS, AND RECORDED OUR OBSERVATIONS!
TIME TO GRAPH OR CHART OUR RESULTS. LET'S START WITH SIMPLE PICTURES! DRAW 3 DIFFERENT PICTURES OF WHAT THE BALLOON LOOKED LIKE DURING THE EXPERIMENT.
5 SECONDS
15 SECONDS
30 SECONDS
THIS IS A PICTURE GRAPH THAT SHOWS THE DIFFERENT STAGES OF YOUR EXPERIMENT. YOUR PICTURES SHOW HOW THE BALLOON CHANGED AS THE BAKING SODA MIXED WITH THE VINEGAR.
THIS IS LIKE MIXING SCIENCE AND ART TOGETHER!

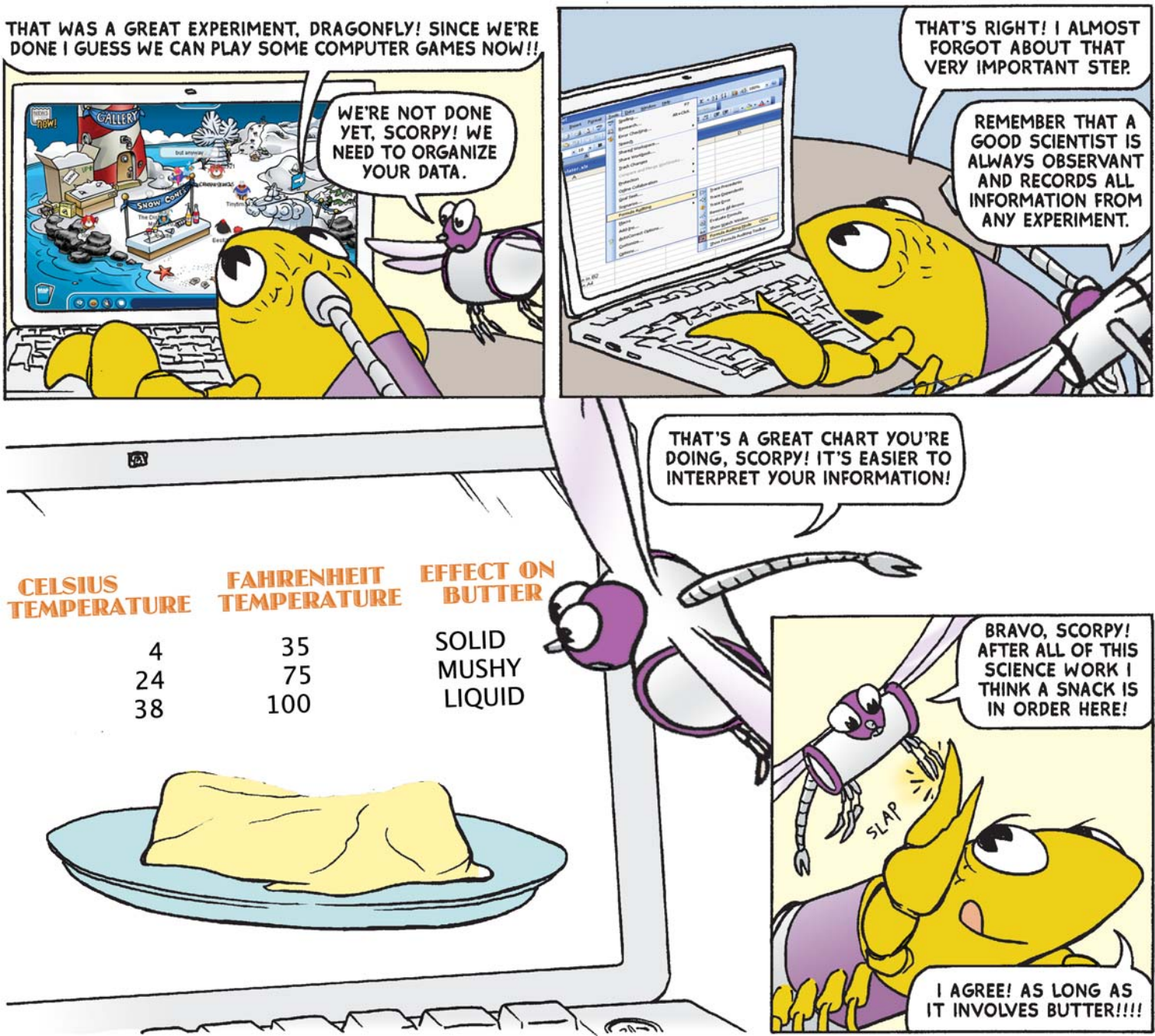

SAY, I HAVE ONE MORE THING I'D LIKE TO MIX. I WONDER WHAT WOULD HAPPEN IF I USED MORE BAKING SODA AND VINEGAR IN THIS EXPIERMENT!
MORE?!!
MAKE SURE TO KEEP YOUR GOGGLES ON, SCORPY!
YOU CREATED SO MUCH CARBON DIOXIDE THAT YOUR BALLOON WILL BURST!
SCIENCE EXPERIMENTS ARE A REAL BLAST!!

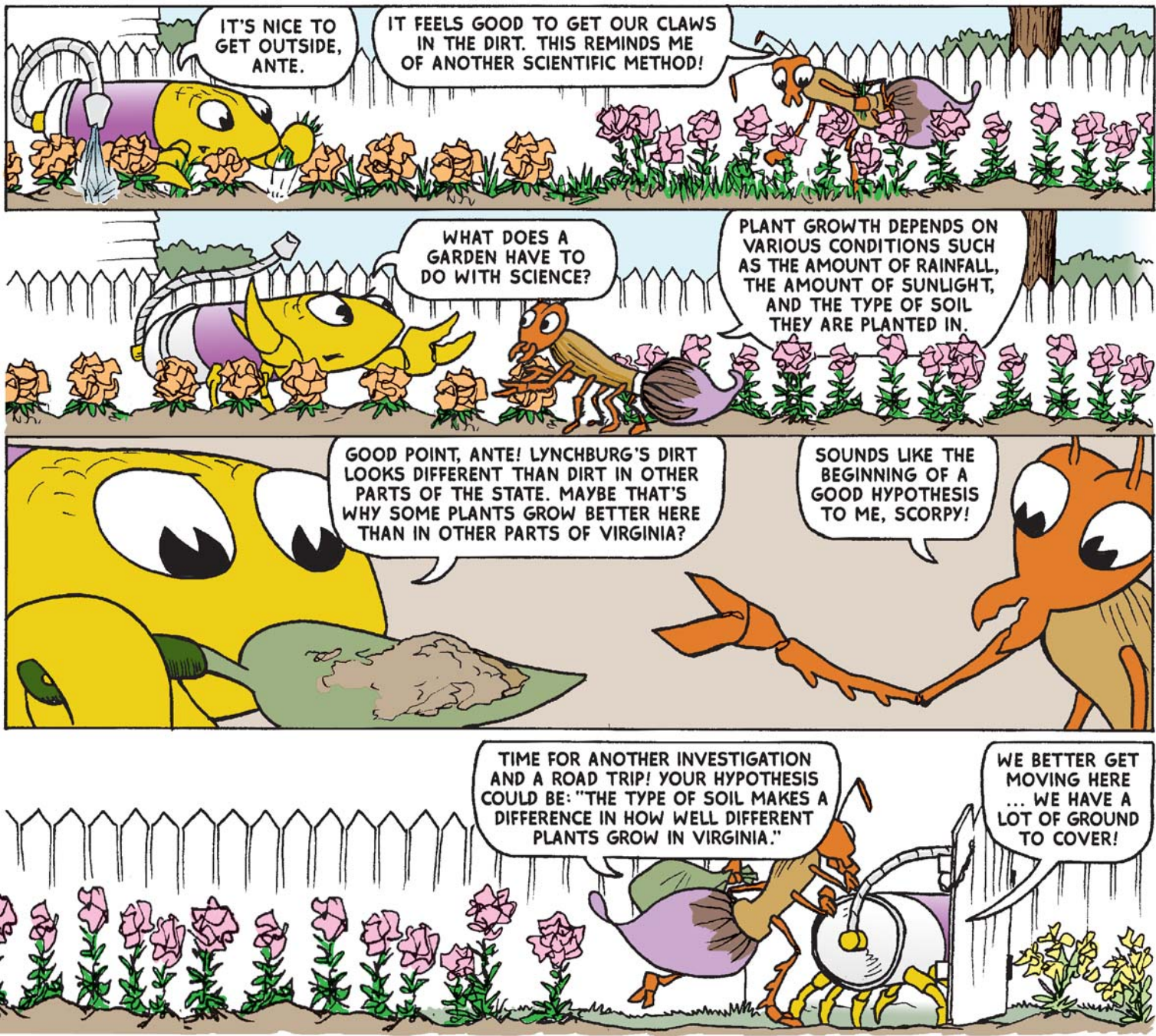

THAT TOAST WAS DELICIOUS, DRAGONFLY. THE YUMMY BUTTER MELTS IN MY MOUTH.
IT LOOKS LIKE YOUR MOUTH IS NOT THE ONLY PLACE THE BUTTER IS MELTING. LOOK AT THE BUTTER ON THE TABLE.
WOW, THAT'S STRANGE. I WONDER WHY THE BUTTER IS MELTING.
SOUNDS LIKE IT 'S TIME FOR ANOTHER SCIENTIFIC INVESTIGATION. LET 'S MAKE A HYPOTHESIS THIS TIME!
A HIPPO WHAT???
A HYPOTHESIS IS AN EDUCATED GUESS ABOUT HOW THINGS WILL WORK. IT'S A PREDICTION! IN SCIENCE BEFORE YOU BEGIN AN EXPERIMENT, YOU MUST HAVE AN IDEA OF WHAT YOU THINK MAY HAPPEN DURING THE EXPERIMENT. IF YOU THINK ABOUT THE PROCESS YOU CAN MAKE A GUESS ABOUT THE RESULTS.
LET'S SEE. I GOT THE BUTTER OUT OF THE REFRIGERATOR 2 HOURS AGO AND IT HAS BEEN ON THE TABLE EVER SINCE. MAYBE THE TEMPERATURE IN THE REFRIGERATOR KEEPS IT FROM MELTING! MAYBE BUTTER MELTS AT WARMER TEMPERATURES!
SOUNDS LIKE AN EDUCATED GUESS TO ME. LET 'S CONDUCT AN EXPERIMENT TO TEST YOUR HYPOTHESIS!
WHO WOULD HAVE THOUGHT SCIENCE COULD BE SO DELICIOUS!!!!!!!!!!!

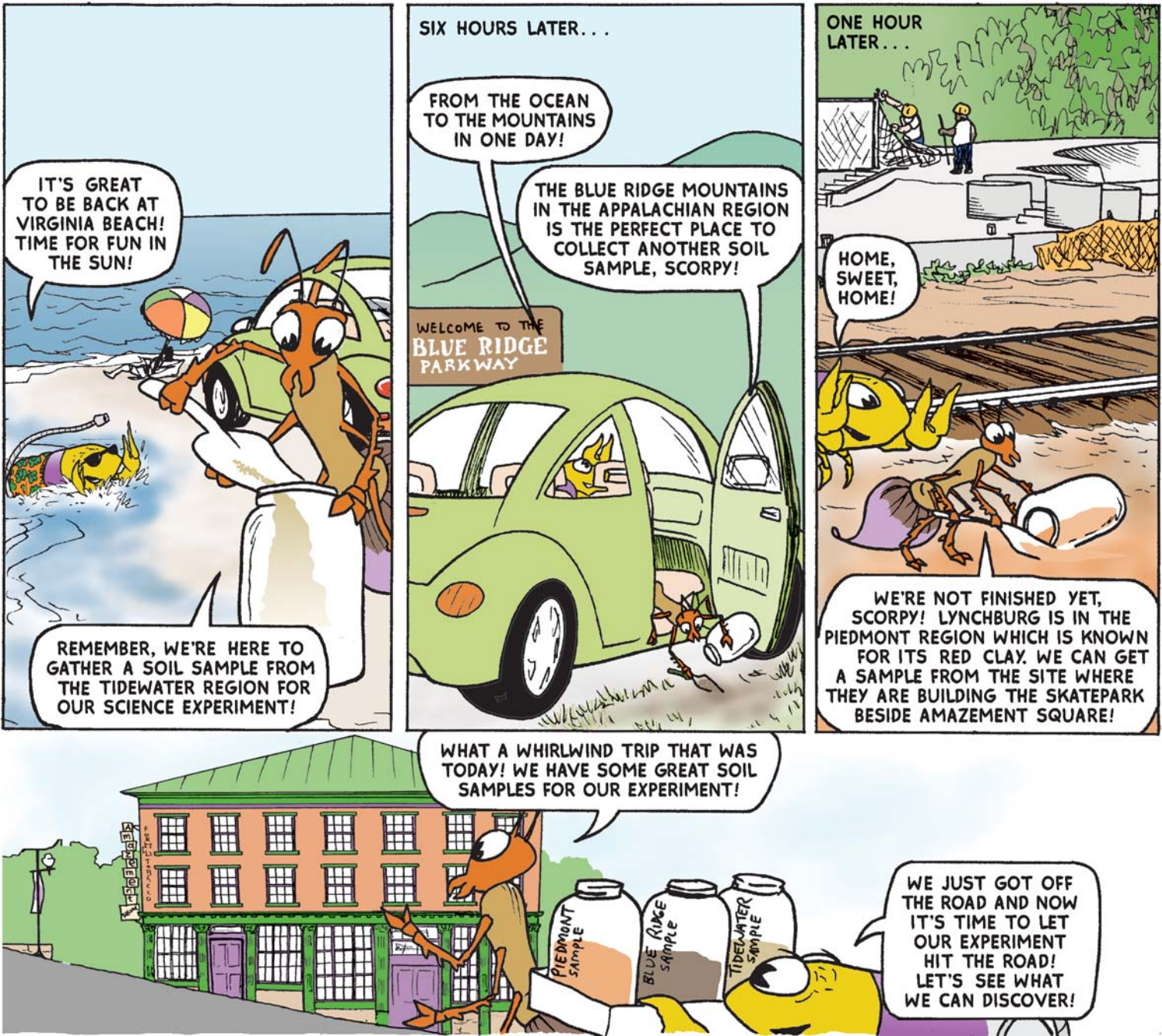

WELL I GUESS I AM GOING TO NEED SOME BUTTER TO TEST MY HYPOTHESIS.
THERE'S PLENTY IN THE REFRIGERATOR. YOU'LL NEED 3 STICKS OF BUTTER. BY THE WAY, SCORPY, HOW MUCH DOES EACH STICK OF BUTTER WEIGH?
WELL THERE ARE 4 STICKS OF BUTTER IN THE PACKAGE AND THE PACKAGE SAYS THAT THE NET WEIGHT IS 16 OUNCES WHICH IS 1 POUND. EACH STICK MUST WEIGH 4 OUNCES.
WELL DONE, SCORPY. THERE ARE SEVERAL DIFFERENT WAYS TO MEASURE LENGTH, WEIGHT, AND VOLUME. YOU ARE USING **STANDARD ENGLISH UNITS** OF MEASUREMENT. OTHER EXAMPLES OF THIS INCLUDE INCHES, FEET, YARDS, QUARTS, AND GALLONS. DO YOU SEE ANOTHER NUMBER ON THE BOX UNDER WEIGHT?
FOUR STICKS NET. WT. 1LB. (454g)
IT SAYS 454G. WHAT DOES THAT MEAN?
454 grams = 16 ounces
THAT STANDS FOR 454 GRAMS. GRAMS ARE A PART OF ANOTHER MEASUREMENT SYSTEM CALLED THE **METRIC SYSTEM**. CENTIMETERS, METERS, LITERS, AND KILOGRAMS ARE ALSO UNITS OF MEASUREMENT IN THE METRIC SYSTEM.
SO 454 GRAMS EQUALS 16 OUNCES! THE METRIC NUMBER IS MUCH LARGER THAN THE OUNCE NUMBER BECAUSE A GRAM IS MUCH SMALLER THAN AN OUNCE!
I GUESS ALL GOOD SCIENTISTS SHOULD KNOW BOTH METRIC AND STANDARD ... JUST FOR GOOD MEASURE HUH??

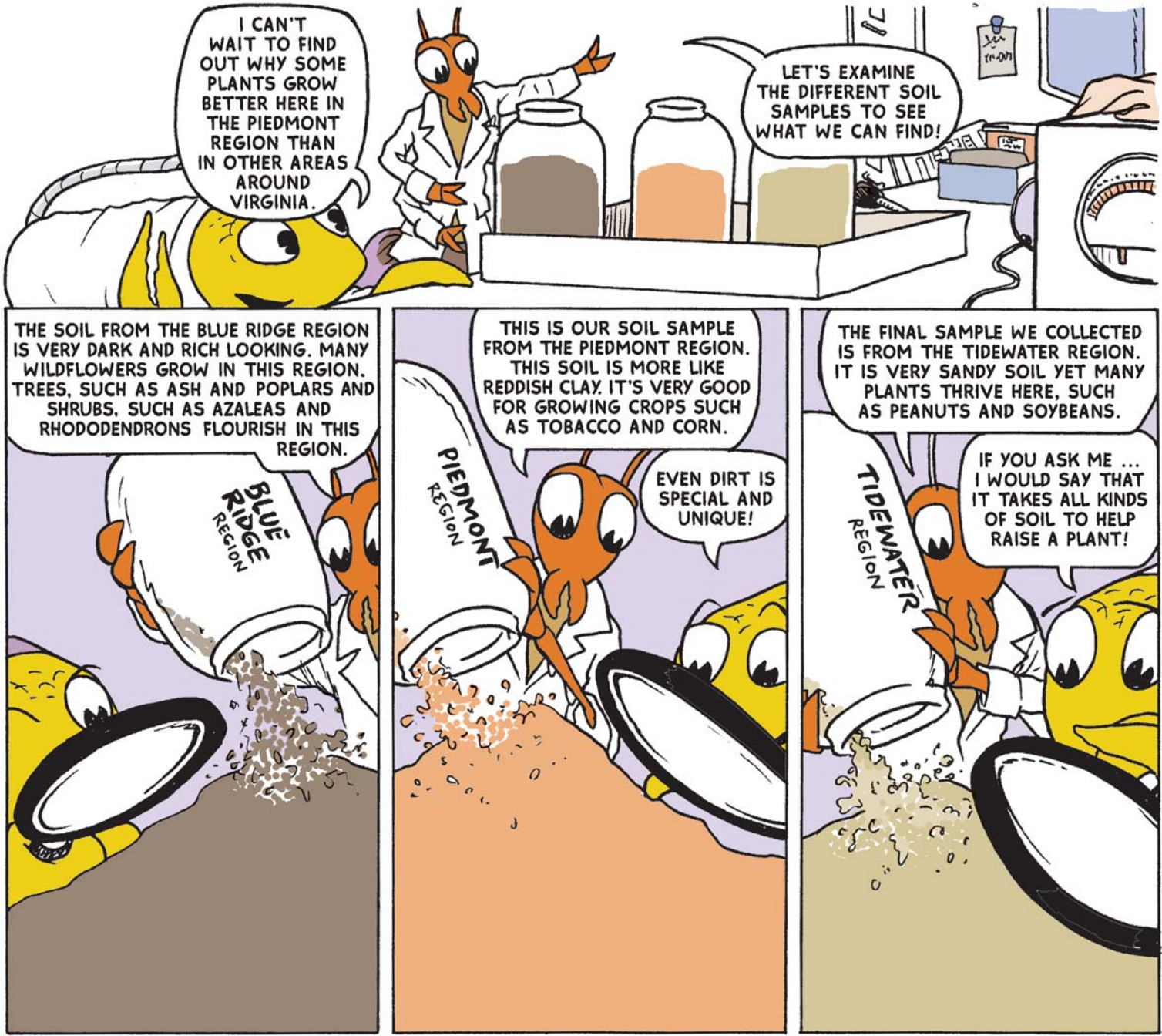

WE NEED THERMOMETERS TO TEST THE TEMPERATURE OF THE AIR IN OUR EXPERIMENT.
I HAVE JUST WHAT YOU NEED HERE, SCORPY!
TWO THERMOMETERS? ONE IS FAHRENHEIT AND HEY... THE OTHER LOOKS BROKEN!!!!
IT'S NOT BROKEN, SCORPY. THAT'S A CELSIUS THERMOMETER! DEGREES FAHRENHEIT IS PART OF THE ENGLISH STANDARD SYSTEM OF MEASUREMENT. DEGREES CELSIUS IS PART OF THE METRIC SYSTEM OF MEASUREMENT.
A CELSIUS THERMOMETER IS JUST LIKE A FAHRENHEIT THERMOMETER IN THAT IT CAN BE USED TO MEASURE TEMPERATURE IN VARIOUS PLACES SUCH AS YOUR HOUSE, YOUR OVEN, OR EVEN YOUR OWN BODY!
IT'S JUST ANOTHER WAY TO READ THE TEMPERATURE!
FAHRENHEIT
230
212
194
176
158
140
122
104
86
68
50
32
14
-4
-22
-40
CELSIUS
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
THE TEMPERATURE HERE NOW IS 75 DEGREES ON THE FAHRENHEIT THERMOMETER AND IT READS ALMOST 24 DEGREES ON THE CELSIUS SCALE. EVEN THOUGH THE NUMBERS ARE DIFFERENT IT IS STILL THE SAME TEMPERATURE!
THAT IS REALLY COOL ... OR IN THIS CASE I GUESS I SHOULD SAY REALLY HOT!!!

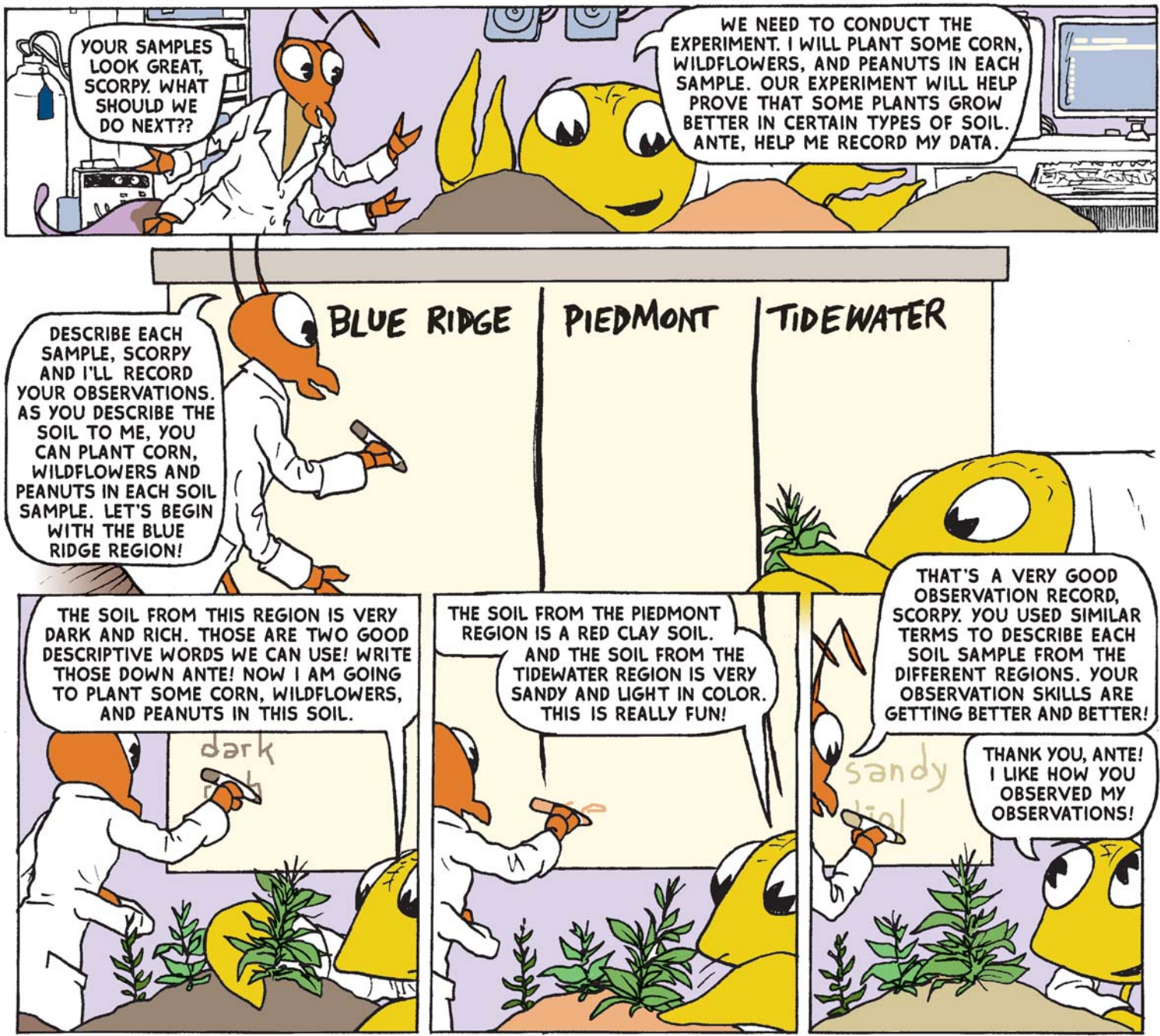

ALRIGHT, I HAVE 3 STICKS OF BUTTER ON 3 PLATES. I AM GOING TO PUT ONE IN THE REFRIGERATOR FOR 2 HOURS, THEN LEAVE ONE OUT ON THE TABLE IN THE HOUSE FOR 2 HOURS AND SEE WHAT HAPPENS. THE 3RD STICK OF BUTTER I WILL LEAVE OUTSIDE FOR 2 HOURS IN THE HEAT.
SOUNDS LIKE A GOOD PLAN!
TWO HOURS LATER...
CELSIUS
FAHRENHEIT
I HAVE MY THERMOMETER AND I AM READY TO RECORD MY OBSERVATIONS.
WOW; THE REFRIGERATOR TEMPERATURE IS 40 DEGREES FAHRENHEIT AND 4 DEGREES CELSIUS AND THE BUTTER IS HARD, NOT MUSHY.
WOW, THE ROOM TEMPERATURE HERE IS 75 DEGREES FAHRENHEIT AND ABOUT 24 DEGREES CELSIUS. THE BUTTER IS NOW MUSHY... NOT QUITE SO HARD.
LET'S CHECK THE BUTTER OUTSIDE.
IT'S 100 DEGREES FAHRENHEIT OUT HERE AND LOOK ... THE BUTTER HAS TURNED TO LIQUID! AND, IT'S ALMOST 38 DEGREES CELSIUS.
YOUR HYPOTHESIS IS CORRECT. BUTTER DOES MELT AT WARMER TEMPERATURES!
IT SURE DOES, DRAGONFLY! NOW THE ONLY THING MISSING FROM THIS EXPERIMENT IS THE POPCORN TO GO WITH THE MELTED BUTTER!!

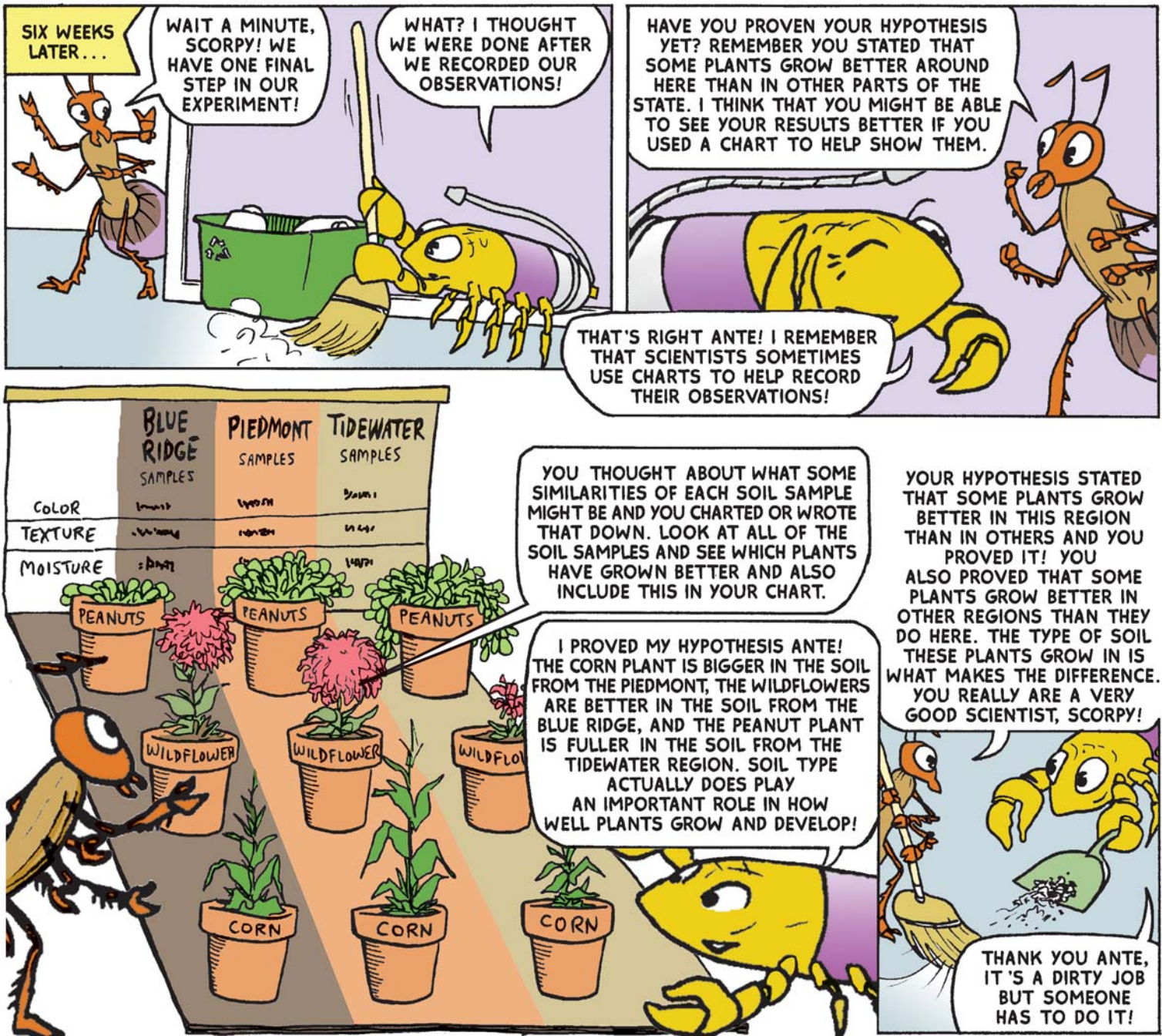

THAT WAS A GREAT EXPERIMENT, DRAGONFLY! SINCE WE'RE DONE I GUESS WE CAN PLAY SOME COMPUTER GAMES NOW!!
WE'RE NOT DONE YET, SCORPY! WE NEED TO ORGANIZE YOUR DATA.
THAT'S RIGHT! I ALMOST FORGOT ABOUT THAT VERY IMPORTANT STEP.
REMEMBER THAT A GOOD SCIENTIST IS ALWAYS OBSERVANT AND RECORDS ALL INFORMATION FROM ANY EXPERIMENT.
THAT'S A GREAT CHART YOU'RE DOING, SCORPY! IT'S EASIER TO INTERPRET YOUR INFORMATION!
CELSIUS TEMPERATURE
FAHRENHEIT TEMPERATURE
EFFECT ON BUTTER
4 35 SOLID
24 75 MUSHY
38 100 LIQUID
BRAVO, SCORPY! AFTER ALL OF THIS SCIENCE WORK I THINK A SNACK IS IN ORDER HERE!
SLAP
I AGREE! AS LONG AS IT INVOLVES BUTTER!!!!

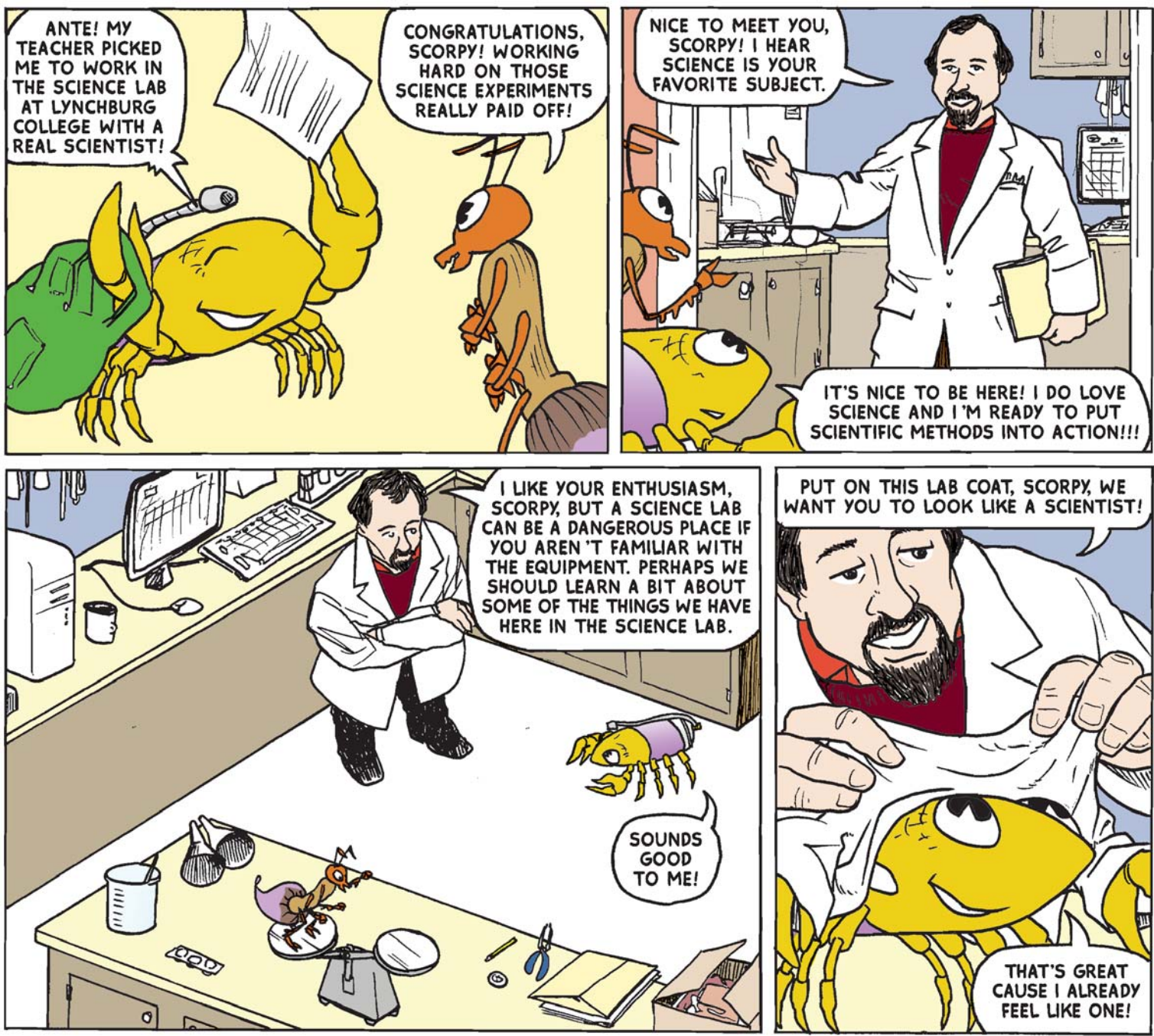

IT'S NICE TO GET OUTSIDE, ANTE.
IT FEELS GOOD TO GET OUR CLAWS IN THE DIRT. THIS REMINDS ME OF ANOTHER SCIENTIFIC METHOD!
WHAT DOES A GARDEN HAVE TO DO WITH SCIENCE?
PLANT GROWTH DEPENDS ON VARIOUS CONDITIONS SUCH AS THE AMOUNT OF RAINFALL, THE AMOUNT OF SUNLIGHT, AND THE TYPE OF SOIL THEY ARE PLANTED IN.
GOOD POINT, ANTE! LYNCHBURG'S DIRT LOOKS DIFFERENT THAN DIRT IN OTHER PARTS OF THE STATE. MAYBE THAT'S WHY SOME PLANTS GROW BETTER HERE THAN IN OTHER PARTS OF VIRGINIA?
SOUNDS LIKE THE BEGINNING OF A GOOD HYPOTHESIS TO ME, SCORPY!
TIME FOR ANOTHER INVESTIGATION AND A ROAD TRIP! YOUR HYPOTHESIS COULD BE: "THE TYPE OF SOIL MAKES A DIFFERENCE IN HOW WELL DIFFERENT PLANTS GROW IN VIRGINIA."
WE BETTER GET MOVING HERE ... WE HAVE A LOT OF GROUND TO COVER!

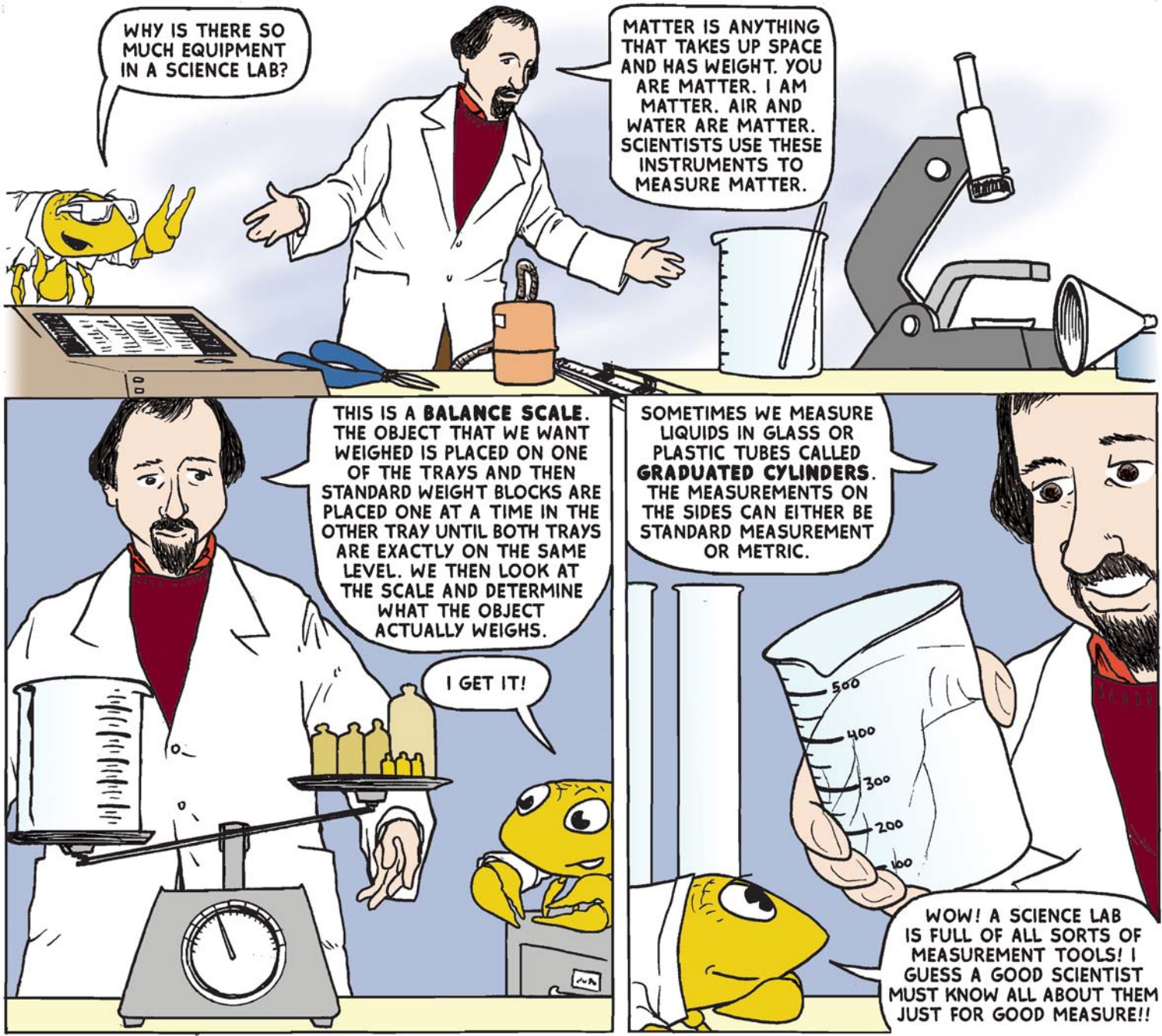

IT'S GREAT TO BE BACK AT VIRGINIA BEACH! TIME FOR FUN IN THE SUN!
REMEMBER, WE'RE HERE TO GATHER A SOIL SAMPLE FROM THE TIDEWATER REGION FOR OUR SCIENCE EXPERIMENT!
SIX HOURS LATER...
FROM THE OCEAN TO THE MOUNTAINS IN ONE DAY!
THE BLUE RIDGE MOUNTAINS IN THE APPALACHIAN REGION IS THE PERFECT PLACE TO COLLECT ANOTHER SOIL SAMPLE, SCORPY!
WELCOME TO THE BLUE RIDGE PARKWAY
ONE HOUR LATER...
HOME, SWEET, HOME!
WE'RE NOT FINISHED YET, SCORPY! LYNCHBURG IS IN THE PIEDMONT REGION WHICH IS KNOWN FOR ITS RED CLAY. WE CAN GET A SAMPLE FROM THE SITE WHERE THEY ARE BUILDING THE SKATEPARK BESIDE AMAZEMENT SQUARE!
WHAT A WHIRLWIND TRIP THAT WAS TODAY! WE HAVE SOME GREAT SOIL SAMPLES FOR OUR EXPERIMENT!
PIEDMONT SAMPLE
BLUE RIDGE SAMPLE
TIDEWATER SAMPLE
WE JUST GOT OFF THE ROAD AND NOW IT'S TIME TO LET OUR EXPERIMENT HIT THE ROAD! LET'S SEE WHAT WE CAN DISCOVER!

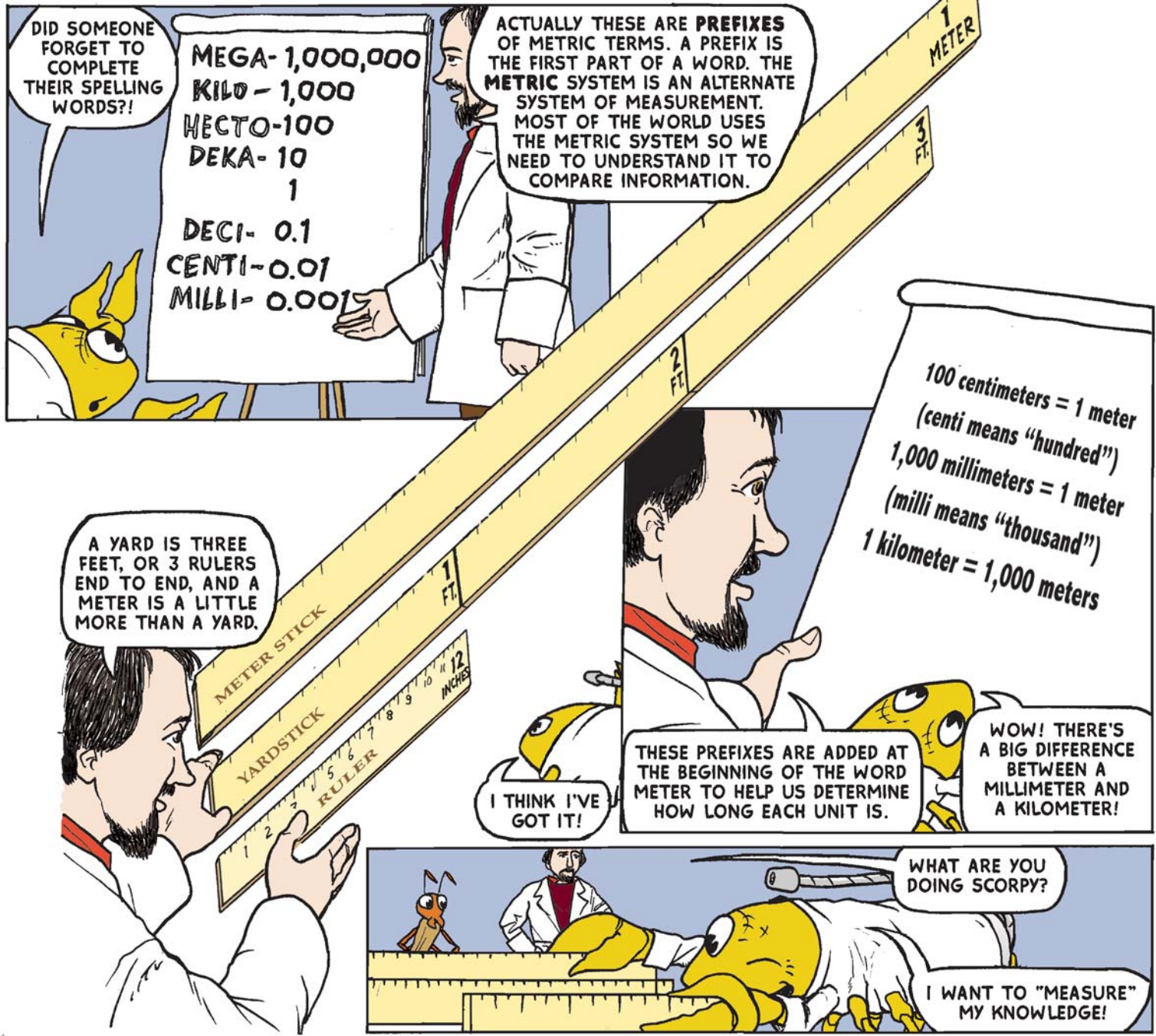

I CAN'T WAIT TO FIND OUT WHY SOME PLANTS GROW BETTER HERE IN THE PIEDMONT REGION THAN IN OTHER AREAS AROUND VIRGINIA.
LET'S EXAMINE THE DIFFERENT SOIL SAMPLES TO SEE WHAT WE CAN FIND!
THE SOIL FROM THE BLUE RIDGE REGION IS VERY DARK AND RICH LOOKING. MANY WILDFLOWERS GROW IN THIS REGION. TREES, SUCH AS ASH AND POPLARS AND SHRUBS, SUCH AS AZALEAS AND RHODODENDRONS FLOURISH IN THIS REGION.
BLUE RIDGE REGION
THIS IS OUR SOIL SAMPLE FROM THE PIEDMONT REGION. THIS SOIL IS MORE LIKE REDDISH CLAY. IT'S VERY GOOD FOR GROWING CROPS SUCH AS TOBACCO AND CORN.
PIEDMONT REGION
EVEN DIRT IS SPECIAL AND UNIQUE!
THE FINAL SAMPLE WE COLLECTED IS FROM THE TIDEWATER REGION. IT IS VERY SANDY SOIL YET MANY PLANTS THRIVE HERE, SUCH AS PEANUTS AND SOYBEANS.
TIDEWATER REGION
IF YOU ASK ME ... I WOULD SAY THAT IT TAKES ALL KINDS OF SOIL TO HELP RAISE A PLANT!

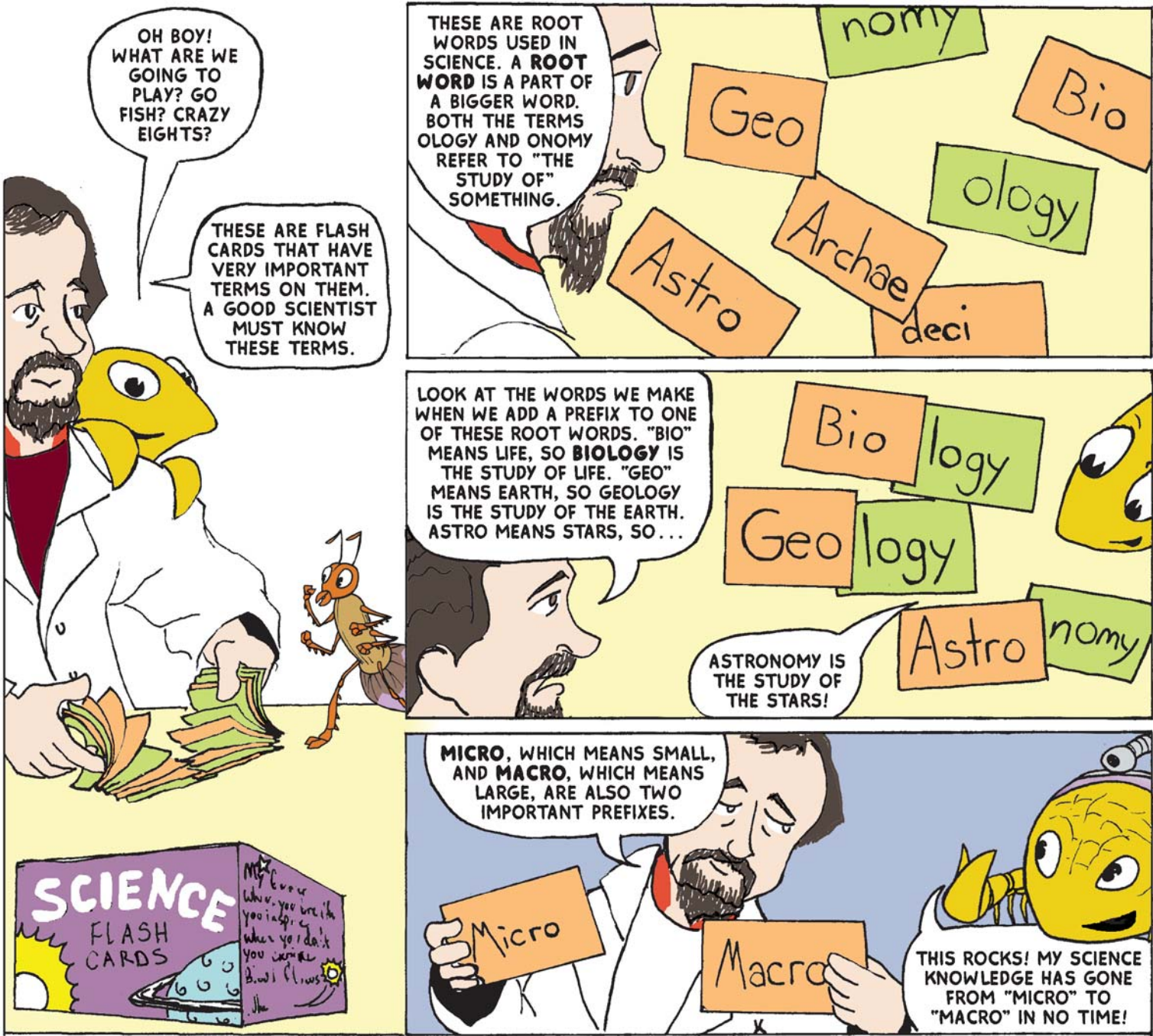

YOUR SAMPLES LOOK GREAT, SCORPY. WHAT SHOULD WE DO NEXT??
WE NEED TO CONDUCT THE EXPERIMENT. I WILL PLANT SOME CORN, WILDFLOWERS, AND PEANUTS IN EACH SAMPLE. OUR EXPERIMENT WILL HELP PROVE THAT SOME PLANTS GROW BETTER IN CERTAIN TYPES OF SOIL. ANTE, HELP ME RECORD MY DATA.
DESCRIBE EACH SAMPLE, SCORPY AND I'LL RECORD YOUR OBSERVATIONS. AS YOU DESCRIBE THE SOIL TO ME, YOU CAN PLANT CORN, WILDFLOWERS AND PEANUTS IN EACH SOIL SAMPLE. LET'S BEGIN WITH THE BLUE RIDGE REGION!
BLUE RIDGE
PIEDMONT
TIDEWATER
THE SOIL FROM THIS REGION IS VERY DARK AND RICH. THOSE ARE TWO GOOD DESCRIPTIVE WORDS WE CAN USE! WRITE THOSE DOWN ANTE! NOW I AM GOING TO PLANT SOME CORN, WILDFLOWERS, AND PEANUTS IN THIS SOIL.
dark
THE SOIL FROM THE PIEDMONT REGION IS A RED CLAY SOIL.
AND THE SOIL FROM THE TIDEWATER REGION IS VERY SANDY AND LIGHT IN COLOR. THIS IS REALLY FUN!
THAT'S A VERY GOOD OBSERVATION RECORD, SCORPY. YOU USED SIMILAR TERMS TO DESCRIBE EACH SOIL SAMPLE FROM THE DIFFERENT REGIONS. YOUR OBSERVATION SKILLS ARE GETTING BETTER AND BETTER!
sandy
THANK YOU, ANTE! I LIKE HOW YOU OBSERVED MY OBSERVATIONS!

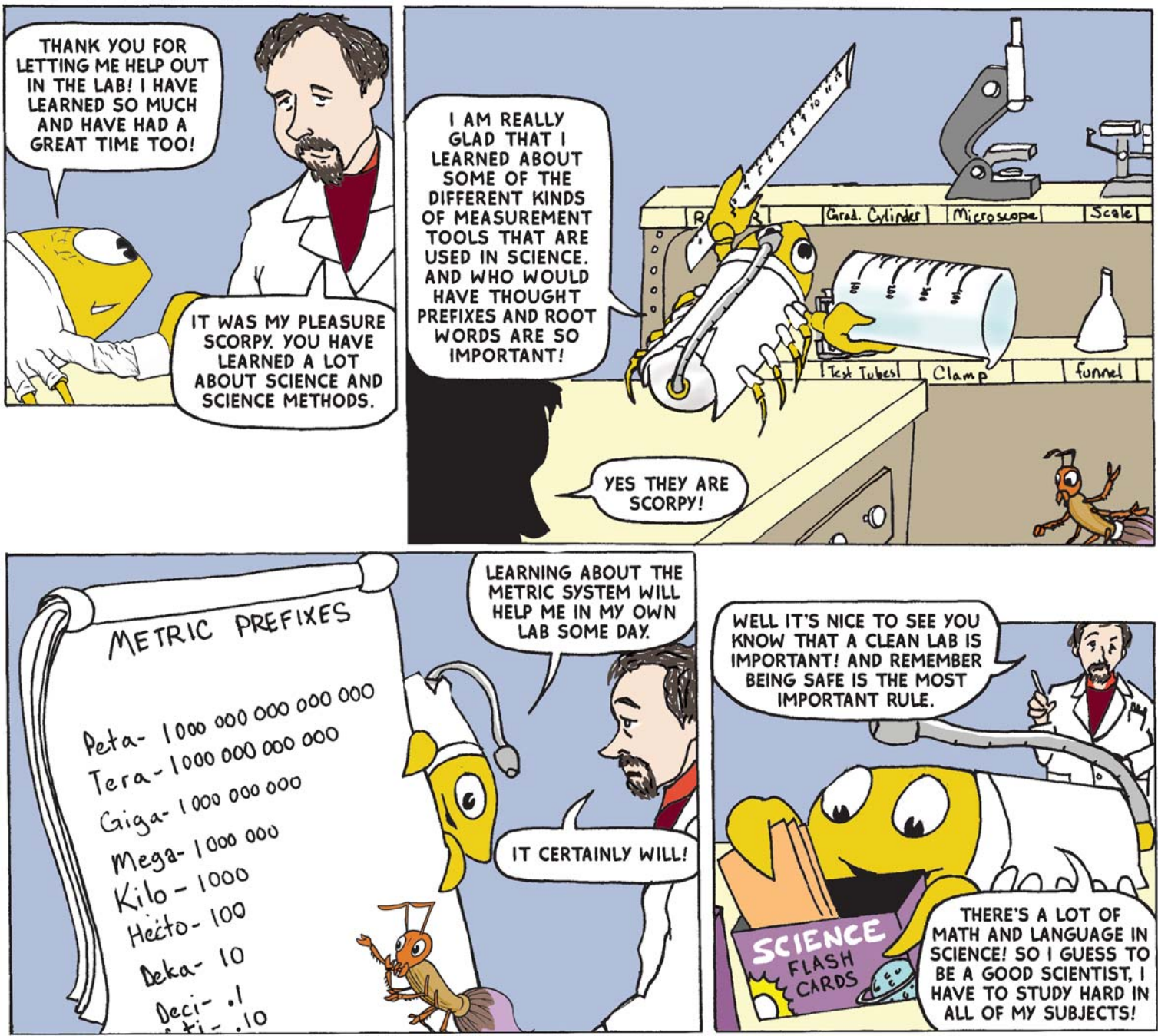

SIX WEEKS LATER...
WAIT A MINUTE, SCORPY! WE HAVE ONE FINAL STEP IN OUR EXPERIMENT!
WHAT? I THOUGHT WE WERE DONE AFTER WE RECORDED OUR OBSERVATIONS!
HAVE YOU PROVEN YOUR HYPOTHESIS YET? REMEMBER YOU STATED THAT SOME PLANTS GROW BETTER AROUND HERE THAN IN OTHER PARTS OF THE STATE. I THINK THAT YOU MIGHT BE ABLE TO SEE YOUR RESULTS BETTER IF YOU USED A CHART TO HELP SHOW THEM.
THAT'S RIGHT ANTE! I REMEMBER THAT SCIENTISTS SOMETIMES USE CHARTS TO HELP RECORD THEIR OBSERVATIONS!
BLUE RIDGE SAMPLES
PIEDMONT SAMPLES
TIDEWATER SAMPLES
COLOR
TEXTURE
MOISTURE
PEANUTS
WILDFLOWER
CORN
YOU THOUGHT ABOUT WHAT SOME SIMILARITIES OF EACH SOIL SAMPLE MIGHT BE AND YOU CHARTED OR WROTE THAT DOWN. LOOK AT ALL OF THE SOIL SAMPLES AND SEE WHICH PLANTS HAVE GROWN BETTER AND ALSO INCLUDE THIS IN YOUR CHART.
I PROVED MY HYPOTHESIS ANTE! THE CORN PLANT IS BIGGER IN THE SOIL FROM THE PIEDMONT, THE WILDFLOWERS ARE BETTER IN THE SOIL FROM THE BLUE RIDGE, AND THE PEANUT PLANT IS FULLER IN THE SOIL FROM THE TIDEWATER REGION. SOIL TYPE ACTUALLY DOES PLAY AN IMPORTANT ROLE IN HOW WELL PLANTS GROW AND DEVELOP!
YOUR HYPOTHESIS STATED THAT SOME PLANTS GROW BETTER IN THIS REGION THAN IN OTHERS AND YOU PROVED IT! YOU ALSO PROVED THAT SOME PLANTS GROW BETTER IN OTHER REGIONS THAN THEY DO HERE. THE TYPE OF SOIL THESE PLANTS GROW IN IS WHAT MAKES THE DIFFERENCE. YOU REALLY ARE A VERY GOOD SCIENTIST, SCORPY!
THANK YOU ANTE, IT'S A DIRTY JOB BUT SOMEONE HAS TO DO IT!


ANTE! MY TEACHER PICKED ME TO WORK IN THE SCIENCE LAB AT LYNCHBURG COLLEGE WITH A REAL SCIENTIST!
CONGRATULATIONS, SCORPY! WORKING HARD ON THOSE SCIENCE EXPERIMENTS REALLY PAID OFF!
NICE TO MEET YOU, SCORPY! I HEAR SCIENCE IS YOUR FAVORITE SUBJECT.
IT'S NICE TO BE HERE! I DO LOVE SCIENCE AND I'M READY TO PUT SCIENTIFIC METHODS INTO ACTION!!!
I LIKE YOUR ENTHUSIASM, SCORPY, BUT A SCIENCE LAB CAN BE A DANGEROUS PLACE IF YOU AREN'T FAMILIAR WITH THE EQUIPMENT. PERHAPS WE SHOULD LEARN A BIT ABOUT SOME OF THE THINGS WE HAVE HERE IN THE SCIENCE LAB.
SOUNDS GOOD TO ME!
PUT ON THIS LAB COAT, SCORPY, WE WANT YOU TO LOOK LIKE A SCIENTIST!
THAT'S GREAT CAUSE I ALREADY FEEL LIKE ONE!


WHY IS THERE SO MUCH EQUIPMENT IN A SCIENCE LAB?
MATTER IS ANYTHING THAT TAKES UP SPACE AND HAS WEIGHT. YOU ARE MATTER. I AM MATTER. AIR AND WATER ARE MATTER. SCIENTISTS USE THESE INSTRUMENTS TO MEASURE MATTER.
THIS IS A BALANCE SCALE. THE OBJECT THAT WE WANT WEIGHED IS PLACED ON ONE OF THE TRAYS AND THEN STANDARD WEIGHT BLOCKS ARE PLACED ONE AT A TIME IN THE OTHER TRAY UNTIL BOTH TRAYS ARE EXACTLY ON THE SAME LEVEL. WE THEN LOOK AT THE SCALE AND DETERMINE WHAT THE OBJECT ACTUALLY WEIGHS.
I GET IT!
SOMETIMES WE MEASURE LIQUIDS IN GLASS OR PLASTIC TUBES CALLED GRADUATED CYLINDERS. THE MEASUREMENTS ON THE SIDES CAN EITHER BE STANDARD MEASUREMENT OR METRIC.
500
400
300
200
100
WOW! A SCIENCE LAB IS FULL OF ALL SORTS OF MEASUREMENT TOOLS! I GUESS A GOOD SCIENTIST MUST KNOW ALL ABOUT THEM JUST FOR GOOD MEASURE!!


DID SOMEONE FORGET TO COMPLETE THEIR SPELLING WORDS?!
MEGA- 1,000,000
KILO – 1,000
HECTO-100
DEKA- 10
1
DECI- 0.1
CENTI-0.01
MILLI- 0.001
ACTUALLY THESE ARE PREFIXES OF METRIC TERMS. A PREFIX IS THE FIRST PART OF A WORD. THE METRIC SYSTEM IS AN ALTERNATE SYSTEM OF MEASUREMENT. MOST OF THE WORLD USES THE METRIC SYSTEM SO WE NEED TO UNDERSTAND IT TO COMPARE INFORMATION.
1 METER
3 FT.
2 FT.
1 FT.
METER STICK
YARDSTICK
RULER
12 INCHES
A YARD IS THREE FEET, OR 3 RULERS END TO END, AND A METER IS A LITTLE MORE THAN A YARD.
100 centimeters = 1 meter
(centi means "hundred")
1,000 millimeters = 1 meter
(milli means "thousand")
1 kilometer = 1,000 meters
I THINK I'VE GOT IT!
THESE PREFIXES ARE ADDED AT THE BEGINNING OF THE WORD METER TO HELP US DETERMINE HOW LONG EACH UNIT IS.
WOW! THERE'S A BIG DIFFERENCE BETWEEN A MILLIMETER AND A KILOMETER!
WHAT ARE YOU DOING SCORPY?
I WANT TO "MEASURE" MY KNOWLEDGE!


OH BOY! WHAT ARE WE GOING TO PLAY? GO FISH? CRAZY EIGHTS?
THESE ARE FLASH CARDS THAT HAVE VERY IMPORTANT TERMS ON THEM. A GOOD SCIENTIST MUST KNOW THESE TERMS.
SCIENCE FLASH CARDS
THESE ARE ROOT WORDS USED IN SCIENCE. A ROOT WORD IS A PART OF A BIGGER WORD. BOTH THE TERMS OLOGY AND ONOMY REFER TO "THE STUDY OF" SOMETHING.
nomy
Geo
Bio
ology
Archae
Astro
deci
LOOK AT THE WORDS WE MAKE WHEN WE ADD A PREFIX TO ONE OF THESE ROOT WORDS. "BIO" MEANS LIFE, SO BIOLOGY IS THE STUDY OF LIFE. "GEO" MEANS EARTH, SO GEOLOGY IS THE STUDY OF THE EARTH. ASTRO MEANS STARS, SO...
Bio
logy
Geo
logy
Astro
nomy
ASTRONOMY IS THE STUDY OF THE STARS!
MICRO, WHICH MEANS SMALL, AND MACRO, WHICH MEANS LARGE, ARE ALSO TWO IMPORTANT PREFIXES.
Micro
Macro
THIS ROCKS! MY SCIENCE KNOWLEDGE HAS GONE FROM "MICRO" TO "MACRO" IN NO TIME!


THANK YOU FOR LETTING ME HELP OUT IN THE LAB! I HAVE LEARNED SO MUCH AND HAVE HAD A GREAT TIME TOO!
IT WAS MY PLEASURE SCORPY. YOU HAVE LEARNED A LOT ABOUT SCIENCE AND SCIENCE METHODS.
I AM REALLY GLAD THAT I LEARNED ABOUT SOME OF THE DIFFERENT KINDS OF MEASUREMENT TOOLS THAT ARE USED IN SCIENCE. AND WHO WOULD HAVE THOUGHT PREFIXES AND ROOT WORDS ARE SO IMPORTANT!
Grad. Cylinder
Microscope
Scale
Test Tubes
Clamp
funnel
YES THEY ARE SCORPY!
METRIC PREFIXES
Peta- 1000 000 000 000 000
Tera- 1000 000 000 000
Giga- 1000 000 000
Mega- 1000 000
Kilo- 1000
Hecto- 100
Deka- 10
Deci- .1
LEARNING ABOUT THE METRIC SYSTEM WILL HELP ME IN MY OWN LAB SOME DAY.
IT CERTAINLY WILL!
WELL IT'S NICE TO SEE YOU KNOW THAT A CLEAN LAB IS IMPORTANT! AND REMEMBER BEING SAFE IS THE MOST IMPORTANT RULE.
SCIENCE FLASH CARDS
THERE'S A LOT OF MATH AND LANGUAGE IN SCIENCE! SO I GUESS TO BE A GOOD SCIENTIST, I HAVE TO STUDY HARD IN ALL OF MY SUBJECTS!