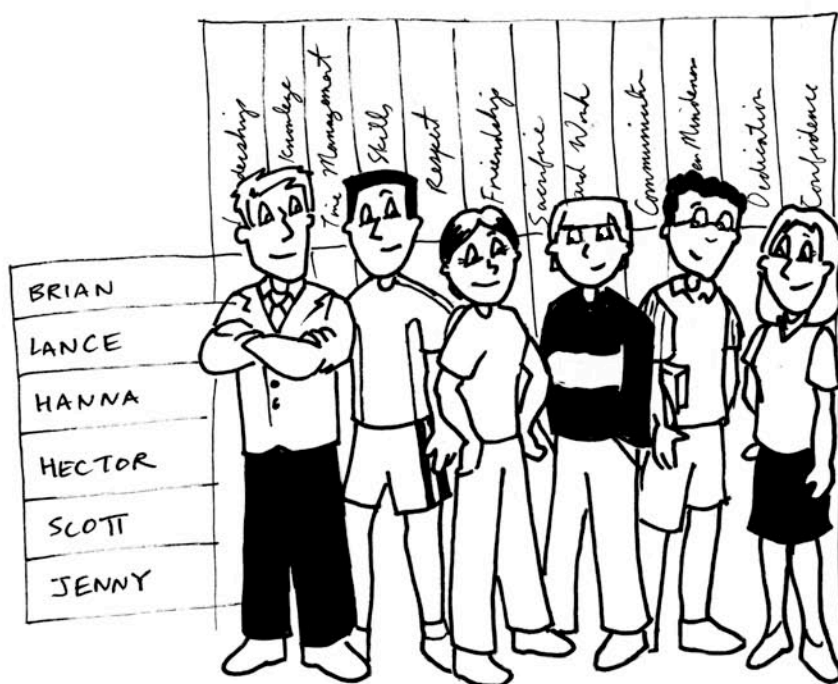


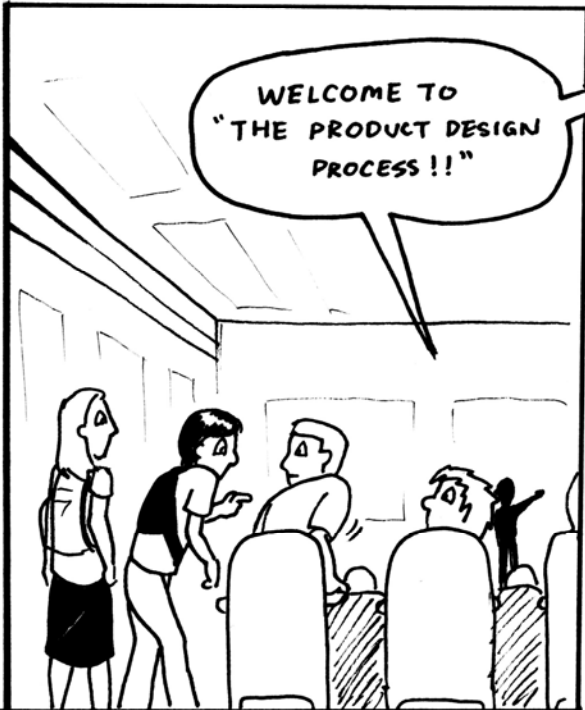
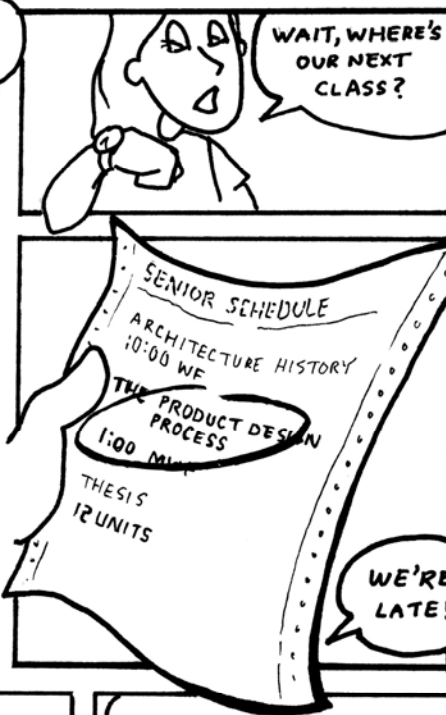
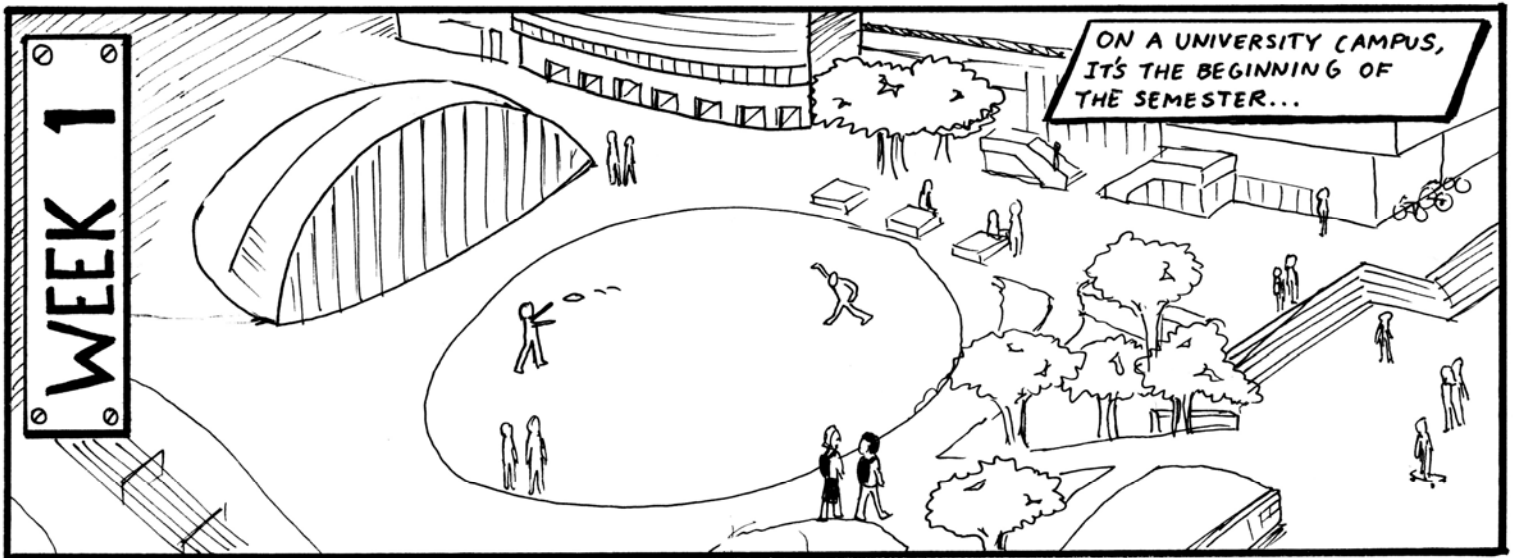
THE PRODUCT DESIGN PROCESS

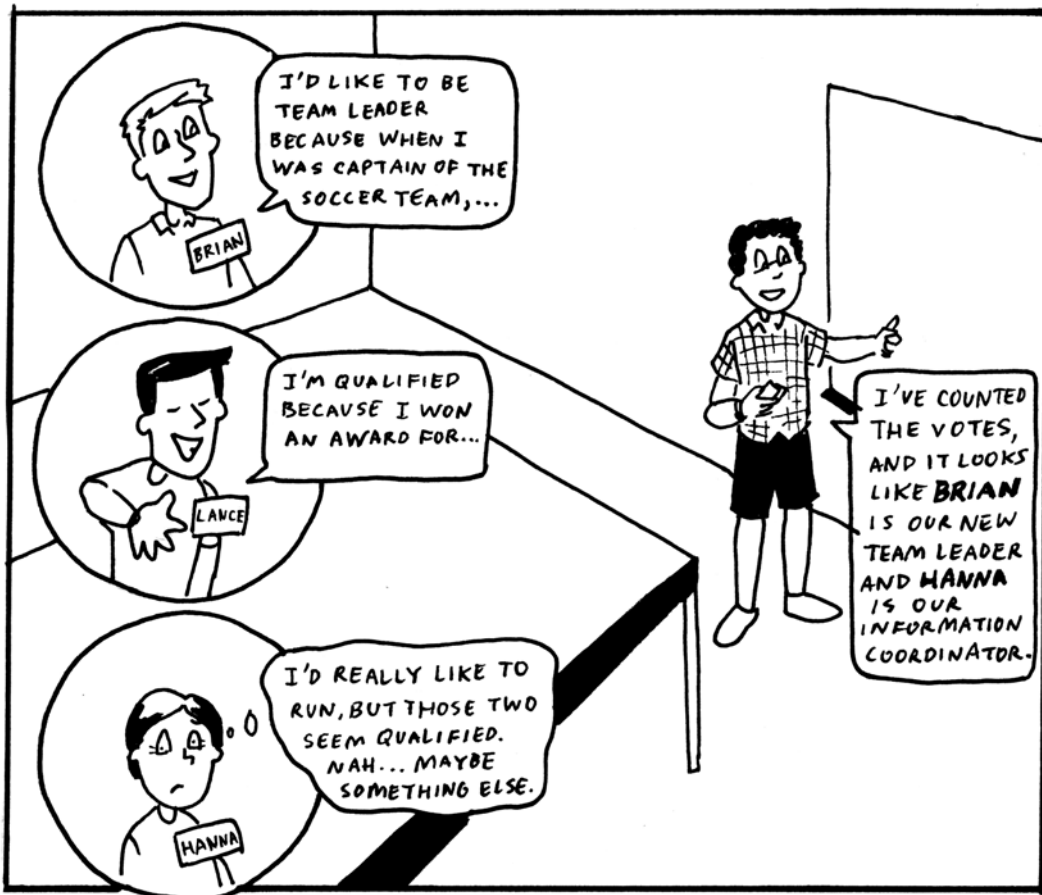
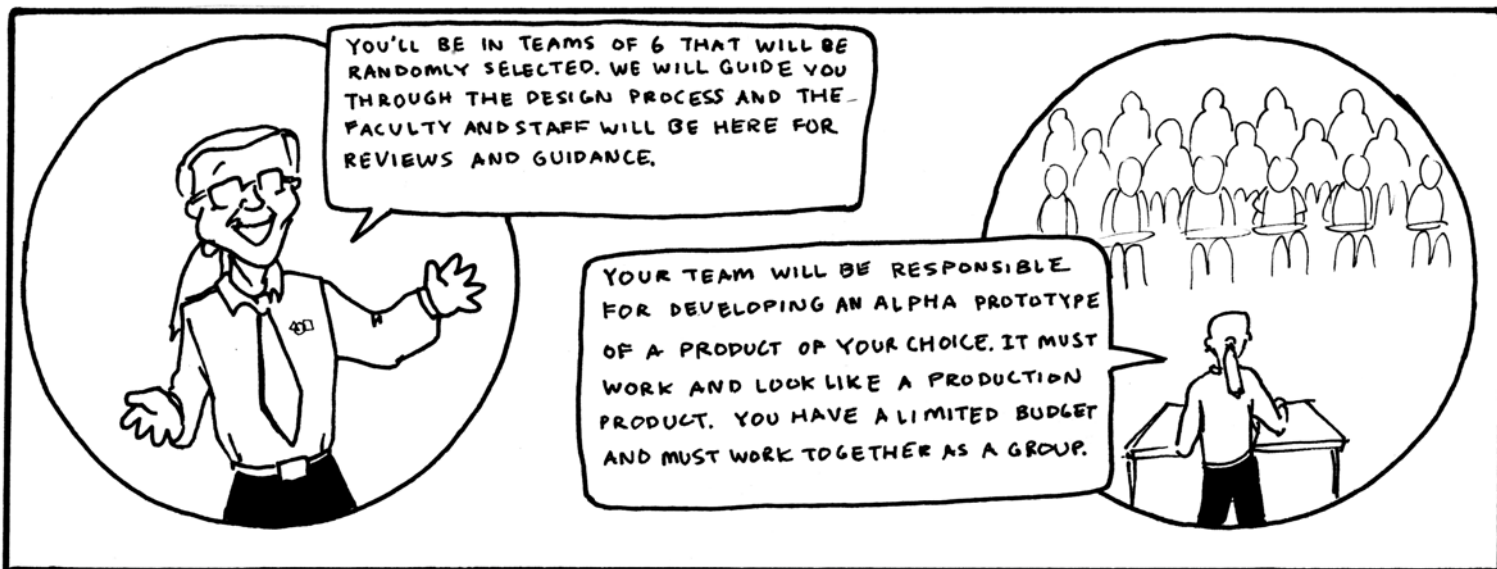
A GRAPHIC NOVEL

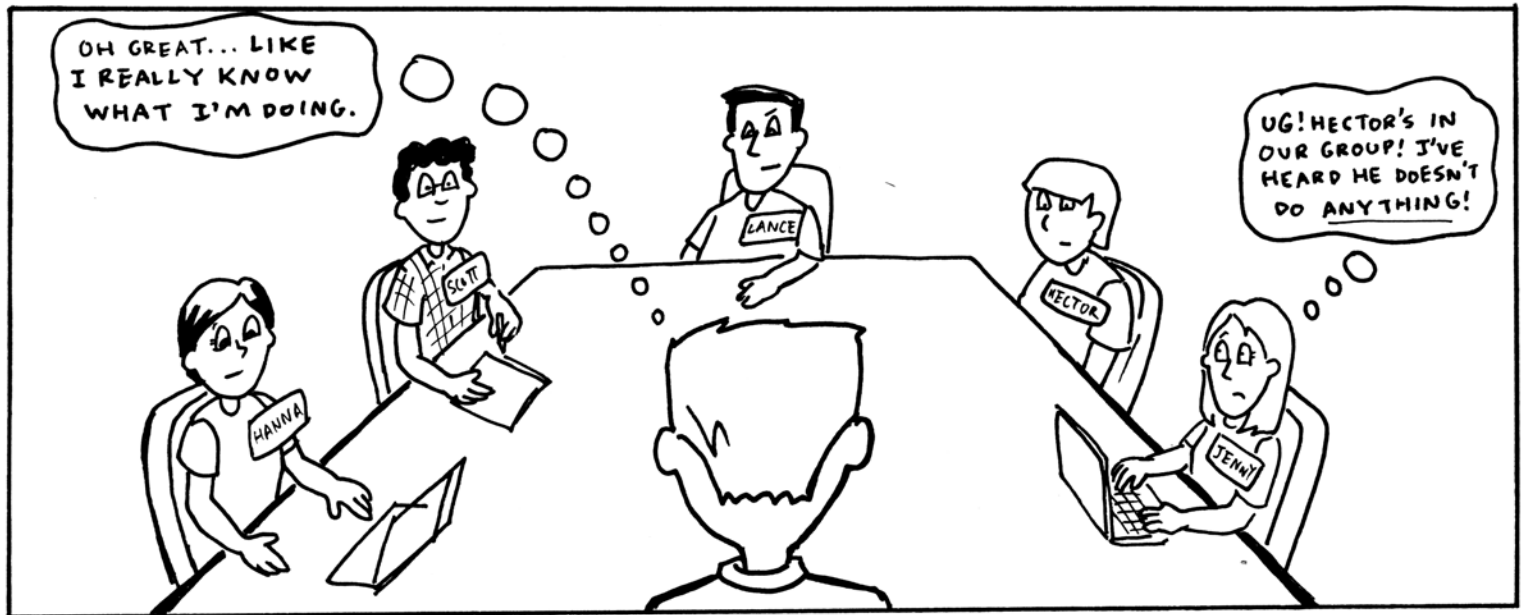


By ALISON WONG

© 2004









HANNA



JENNY



SCOTT



BRIAN

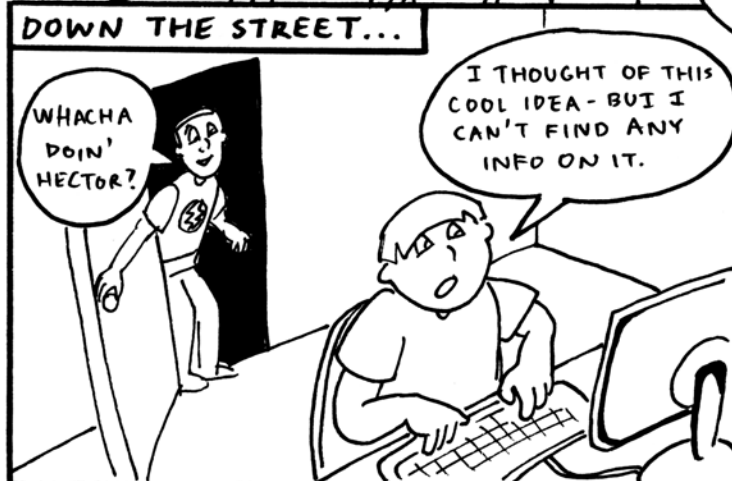
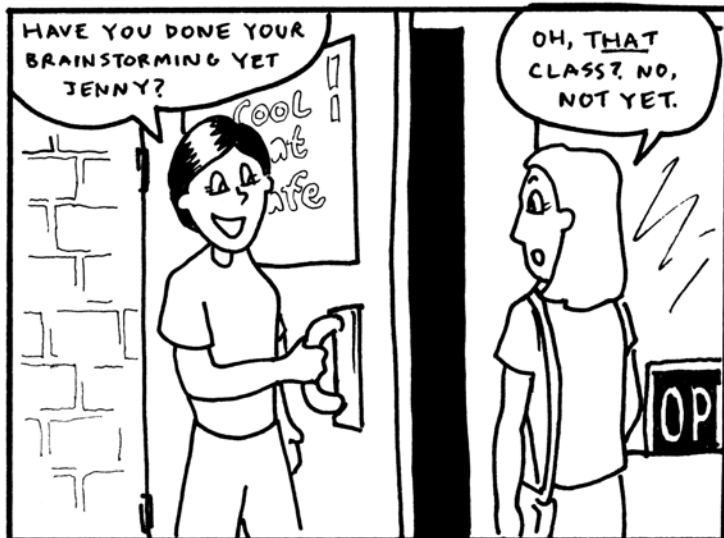


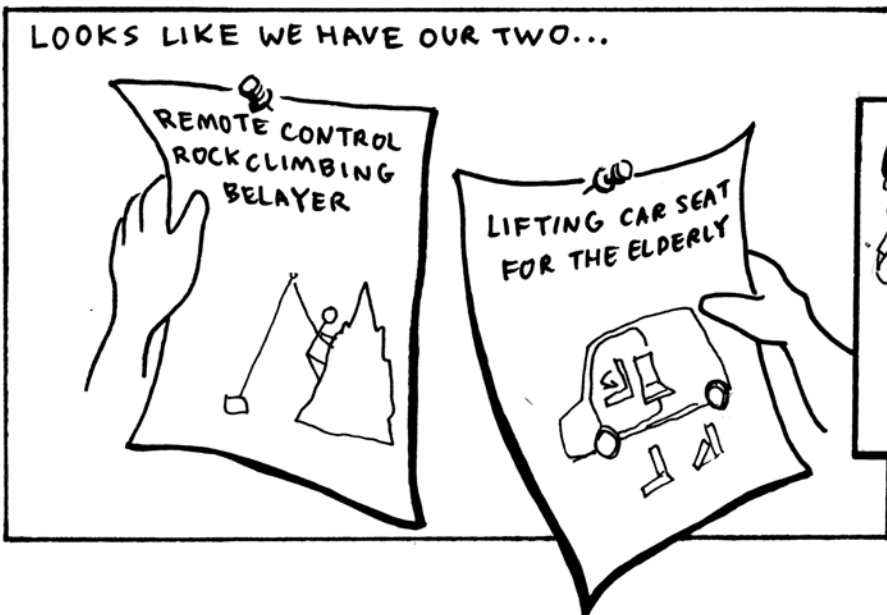
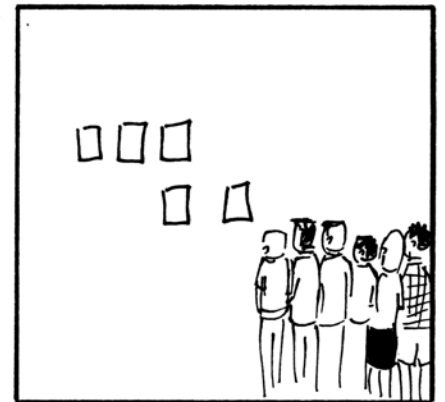
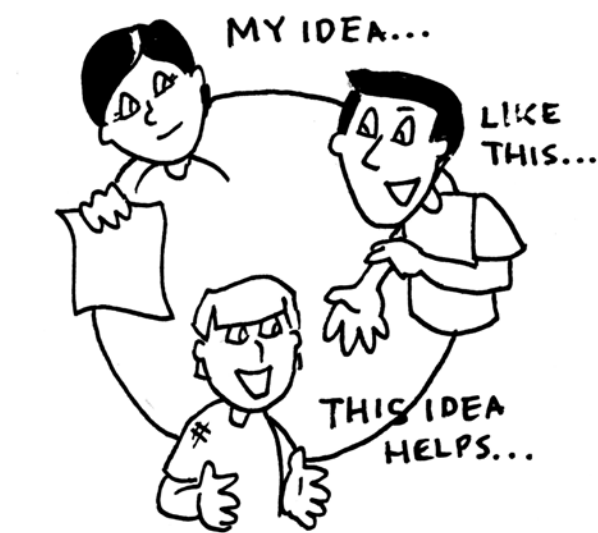
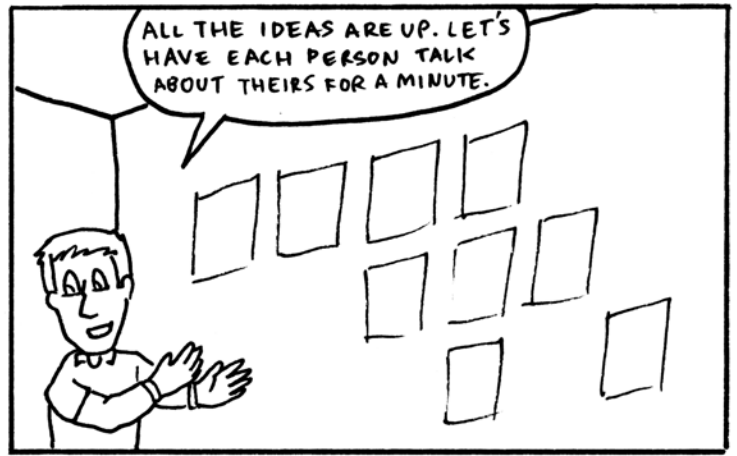
LANCE



HECTOR







THE NEXT DAY

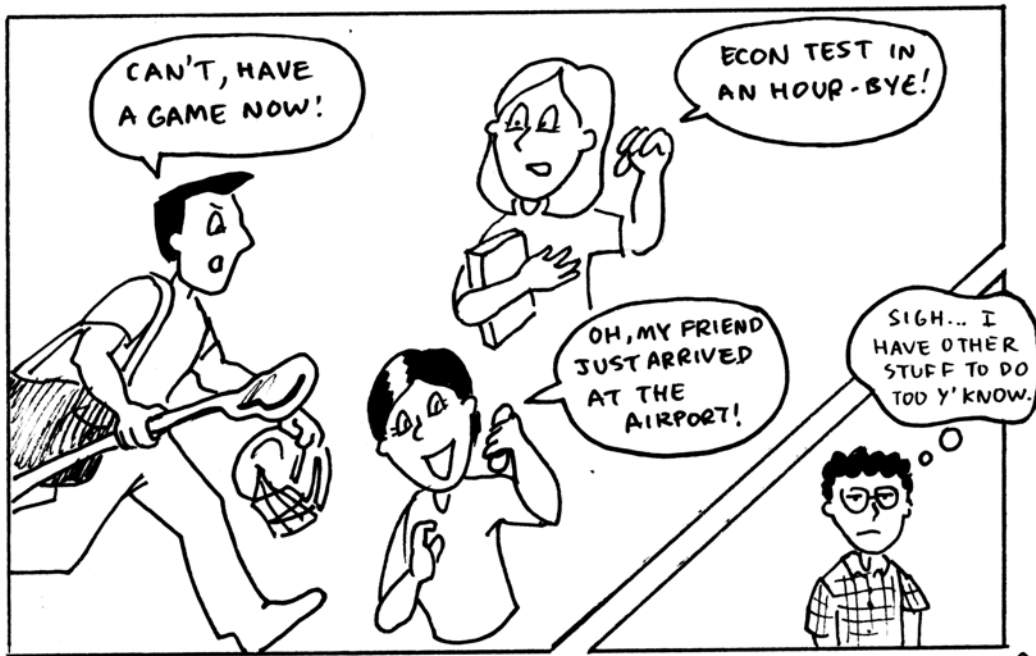
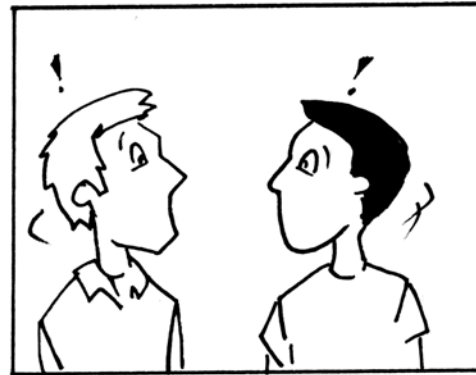
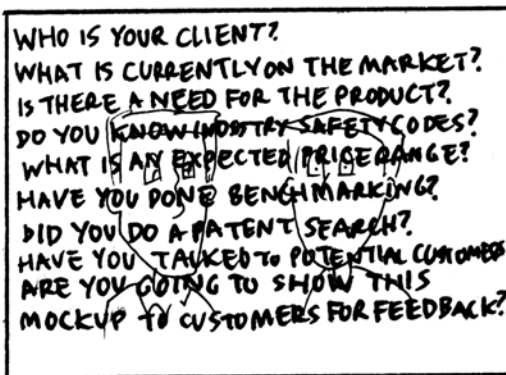
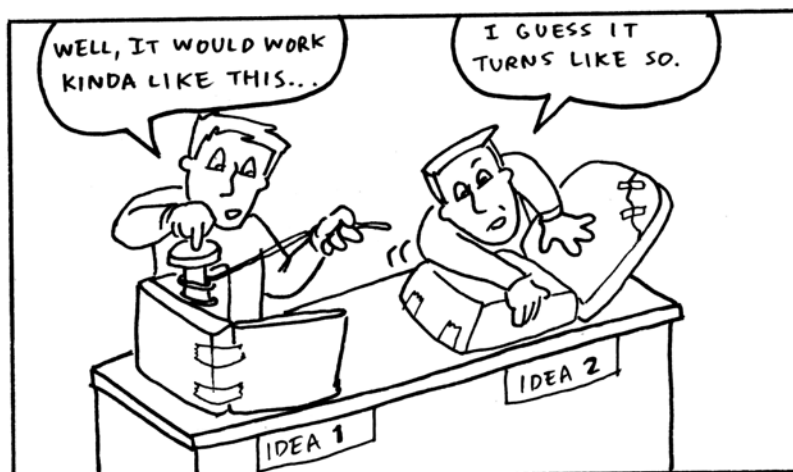


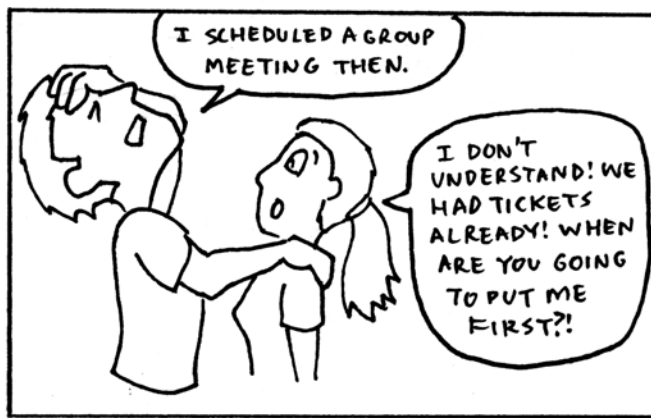
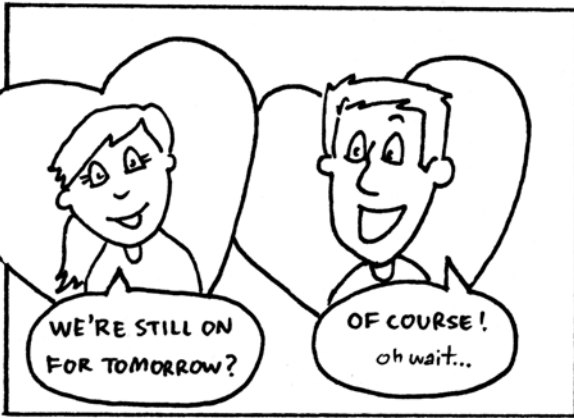
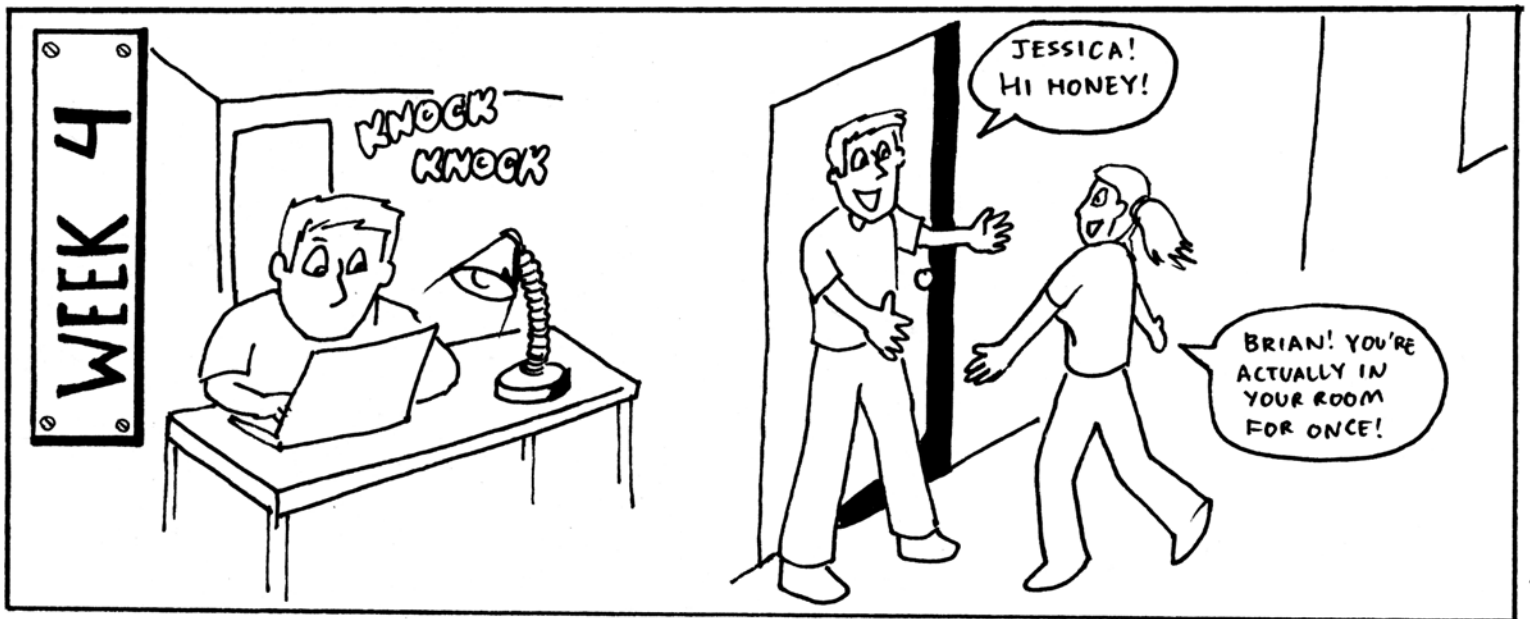
WEEK 3



LATER







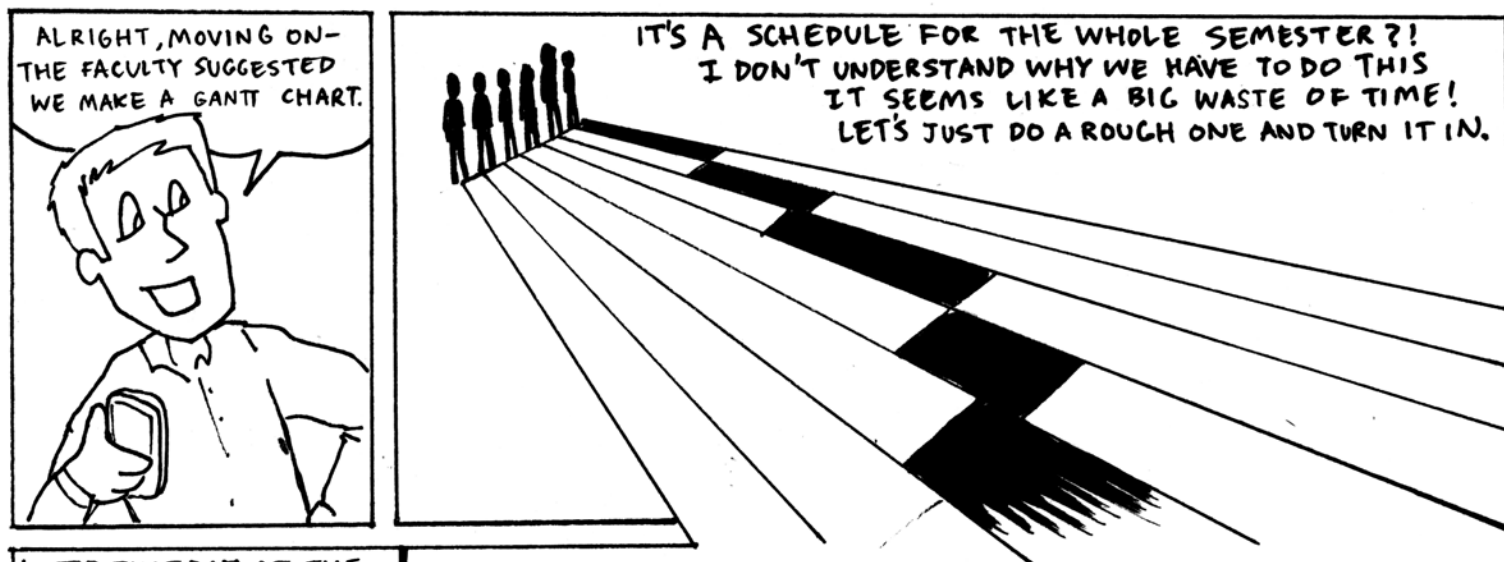
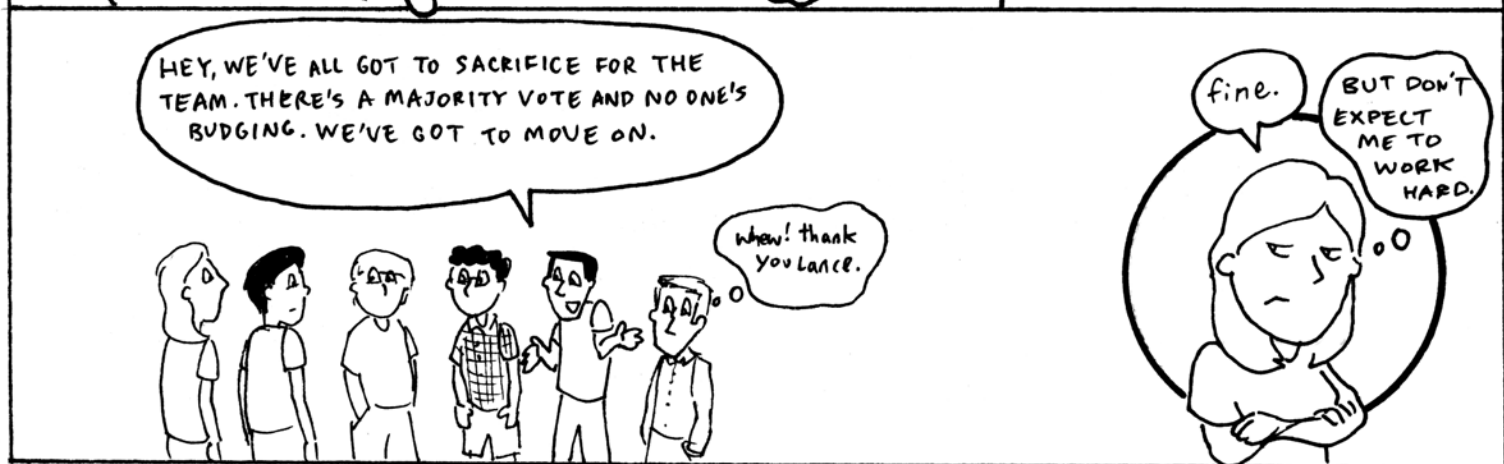
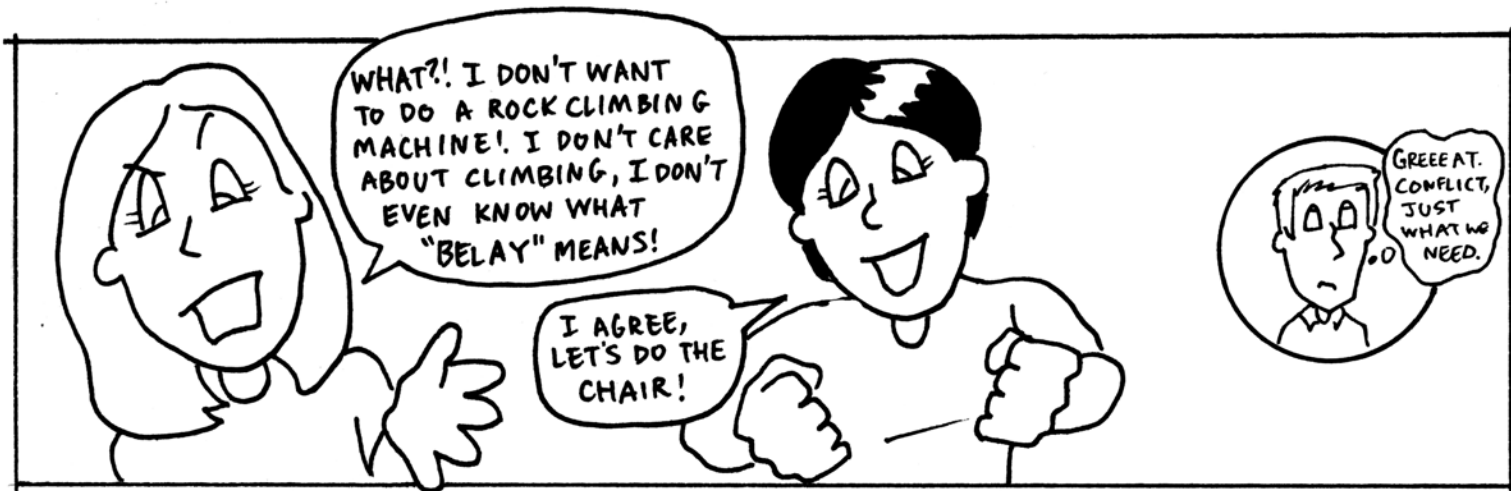
ROCK CLIMBING BELAYER



LIFTING CHAIR



4-2, IT'S
THE REMOTE CONTROLLED
BELAYER!

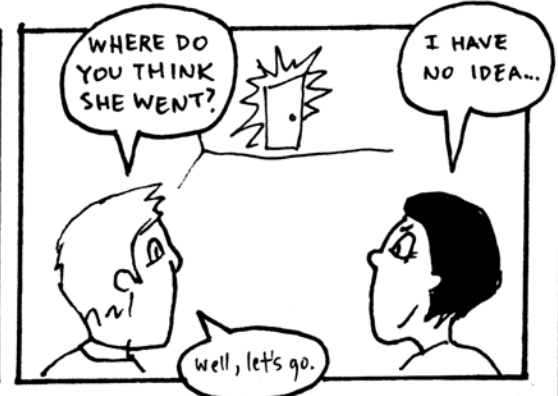
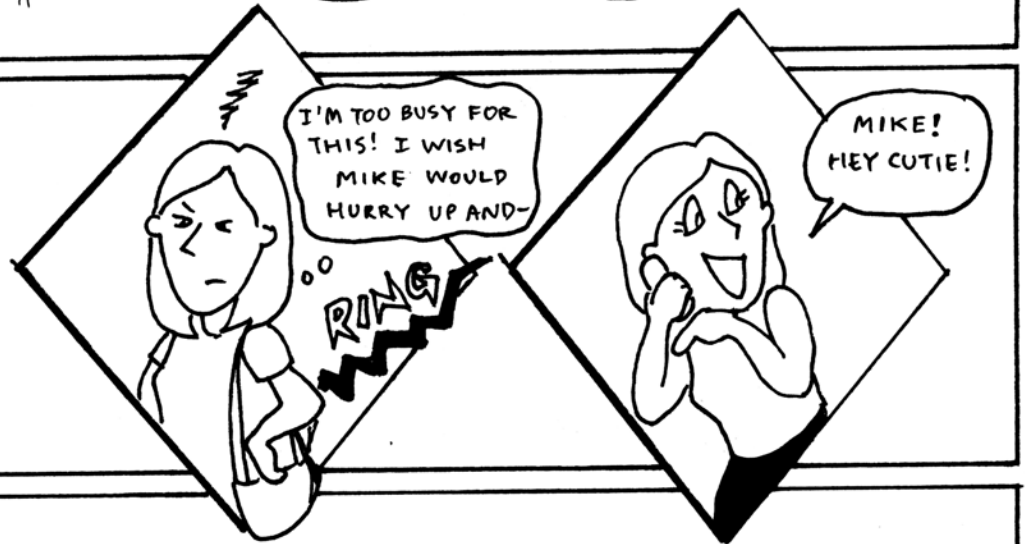


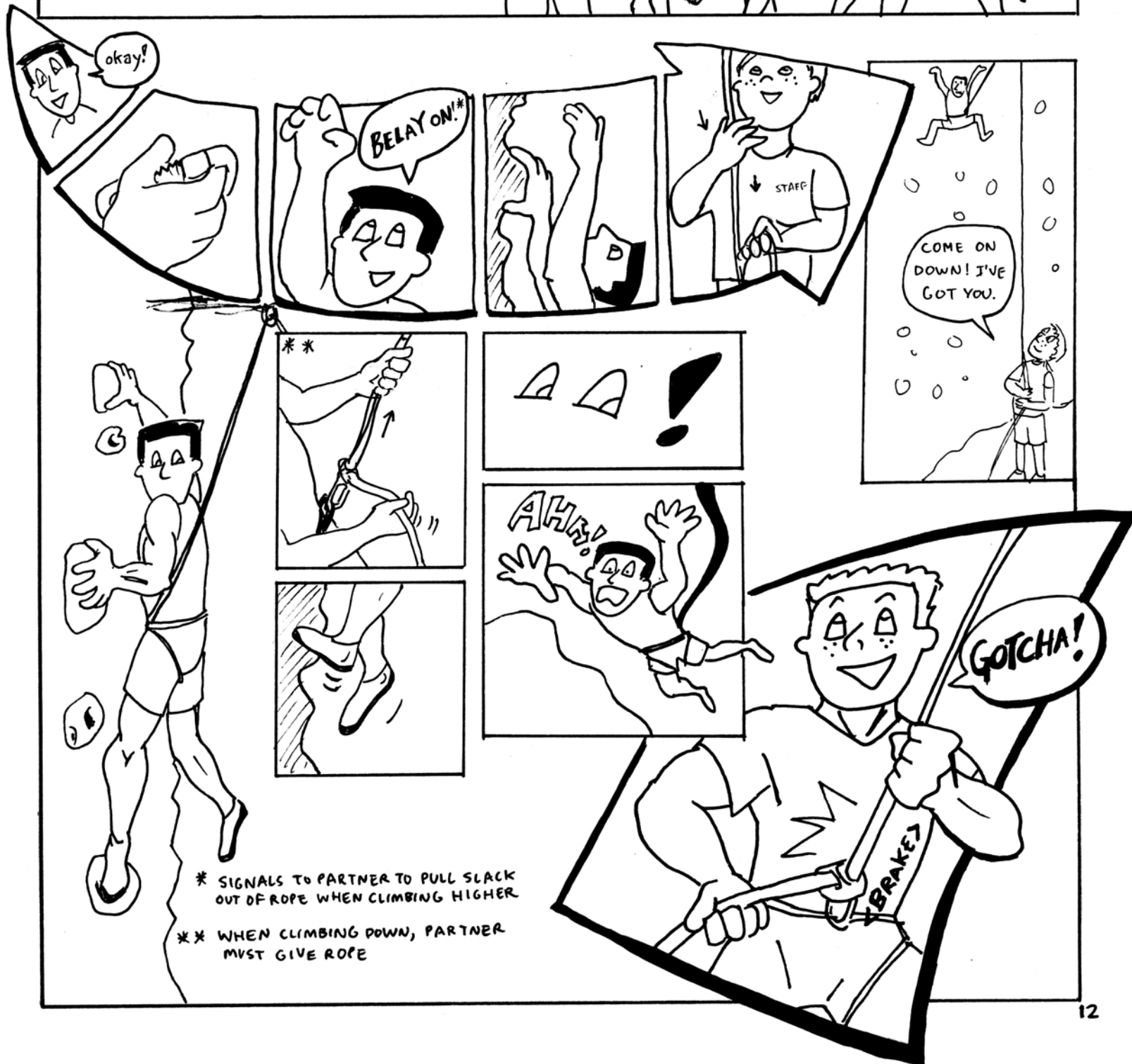
WEEK 5

MEETING TODAY

TALK ABOUT
CLIENT INFO
GATHERING
PERHAPS VISIT
CLIENT AFTER
MEETING.

WE NEED TO FIND OUT WHAT THE CLIENTS WANT.
LET'S THINK OF QUESTIONS TO ASK.





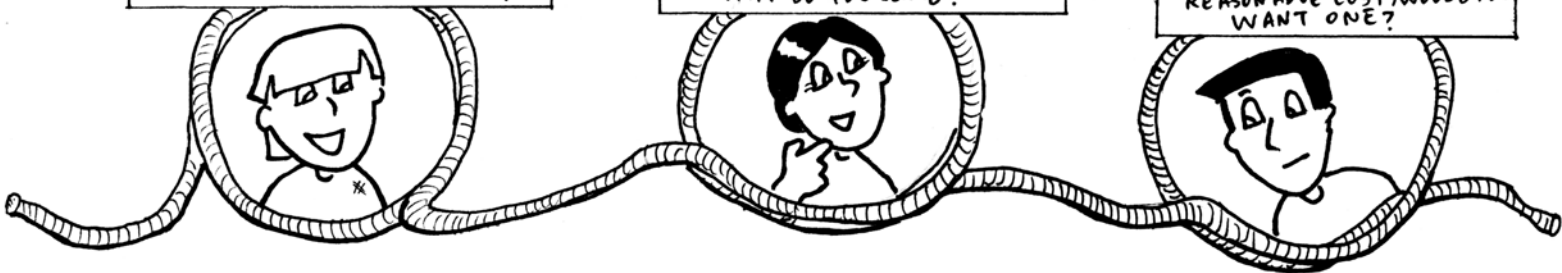
EVERYONE, DO INTERVIEWS AND GATHER RAW DATA!

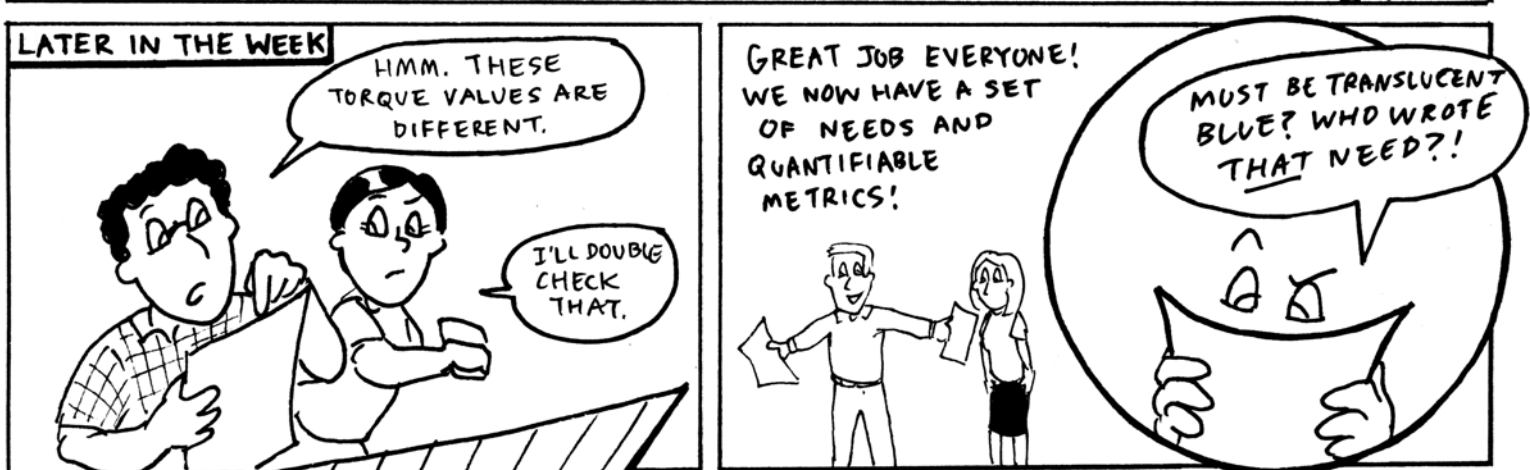
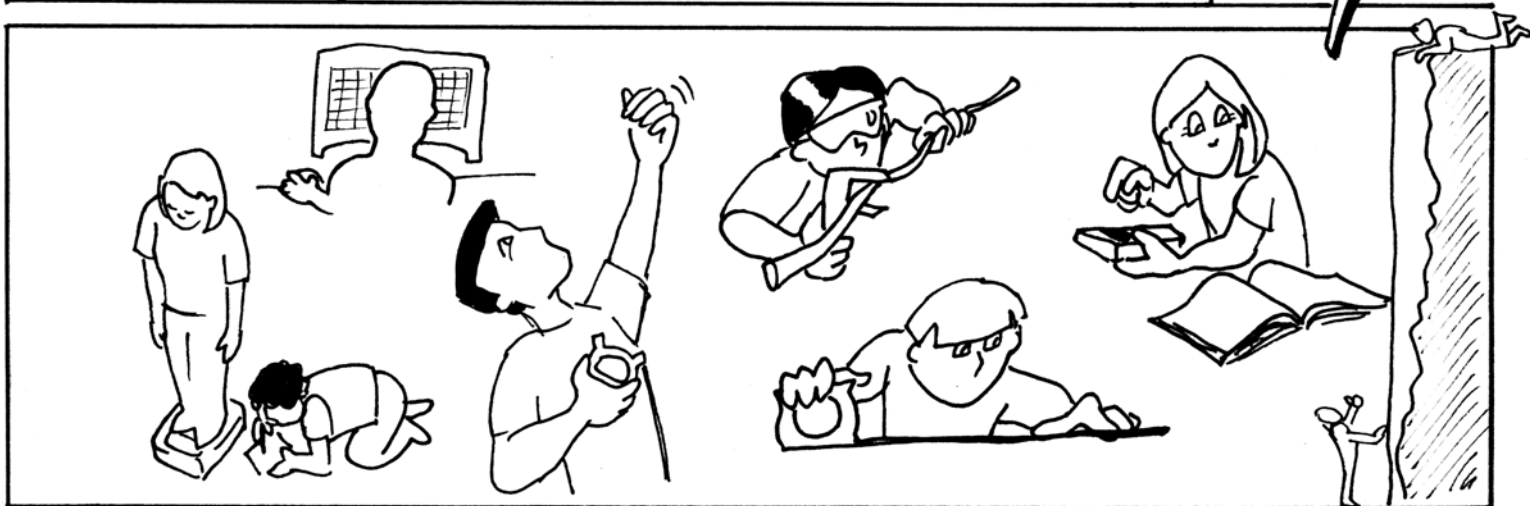
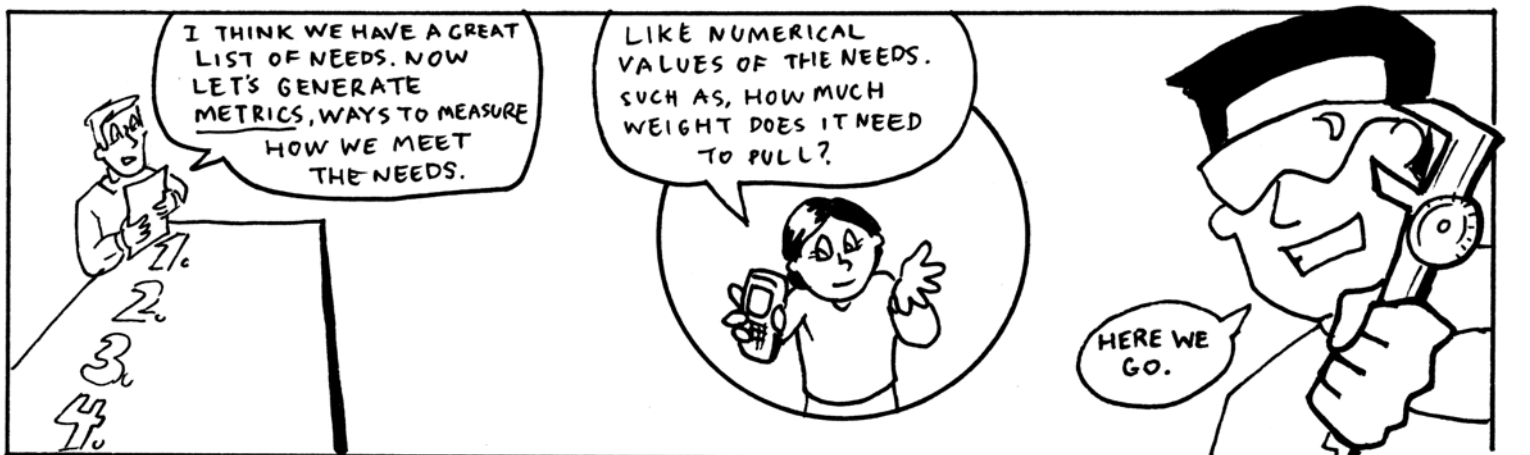


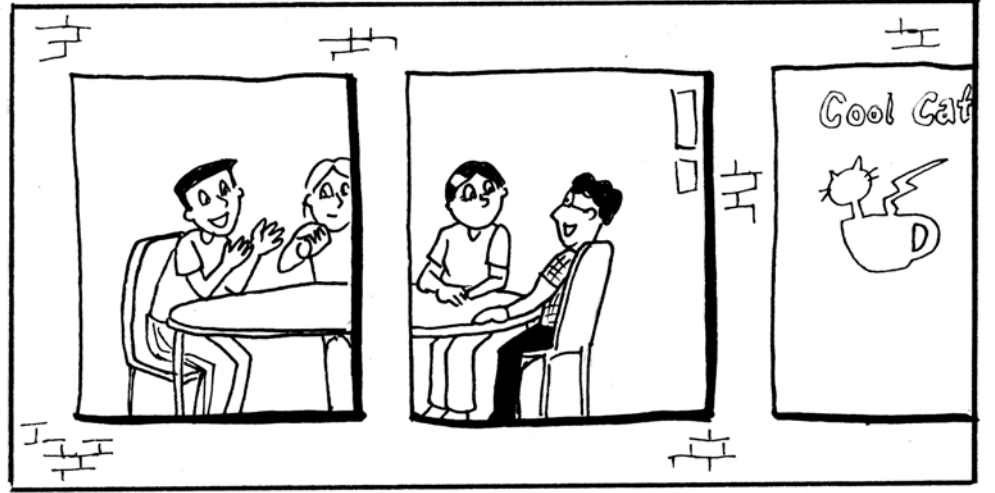
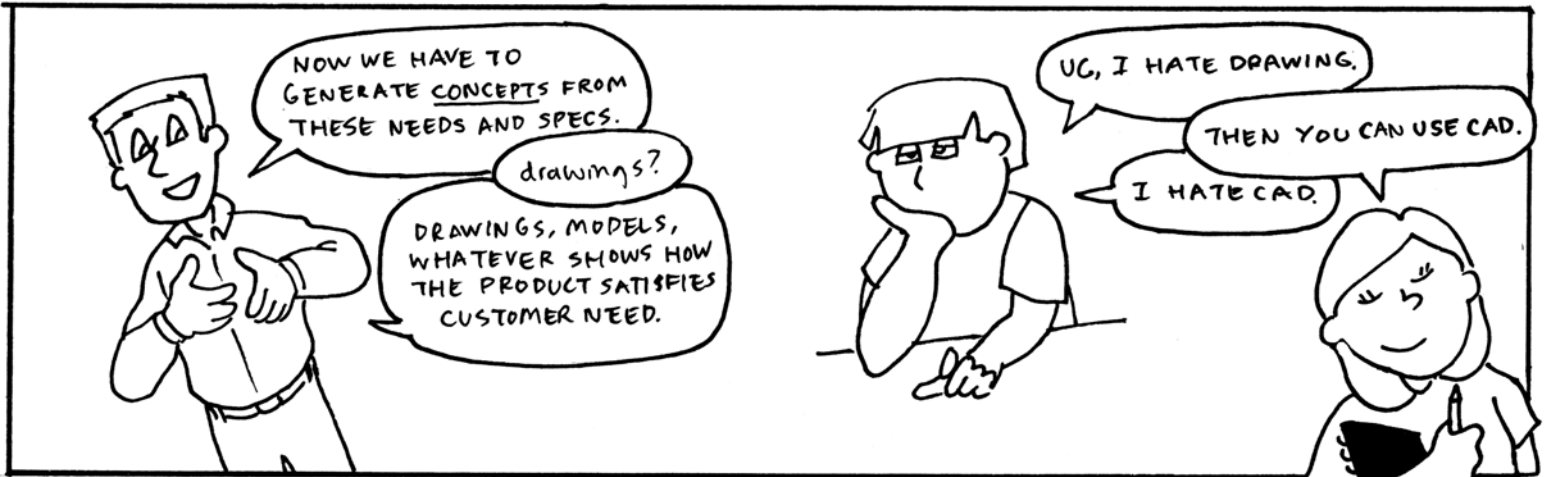
THERE ARE ABOUT 700 ROCKCLIMBING GYMS IN THE US TODAY. WHAT DO YOU LIKE ABOUT THIS ONE?

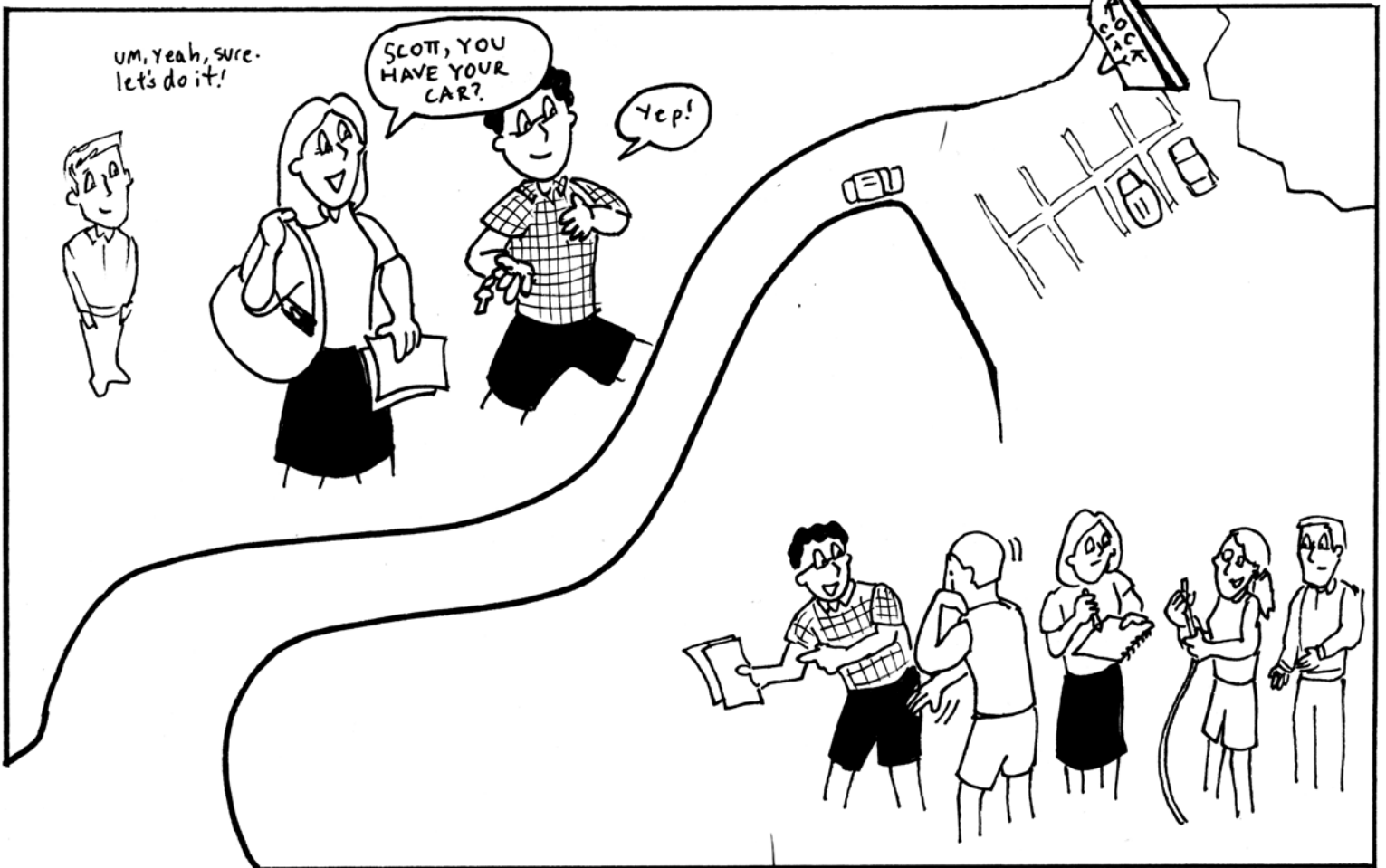
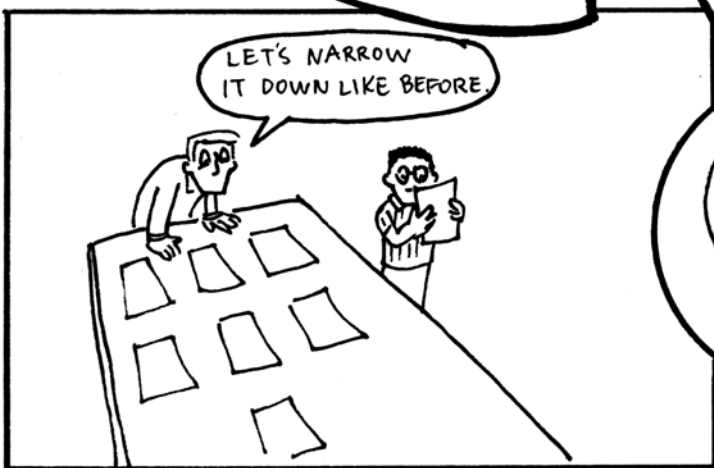
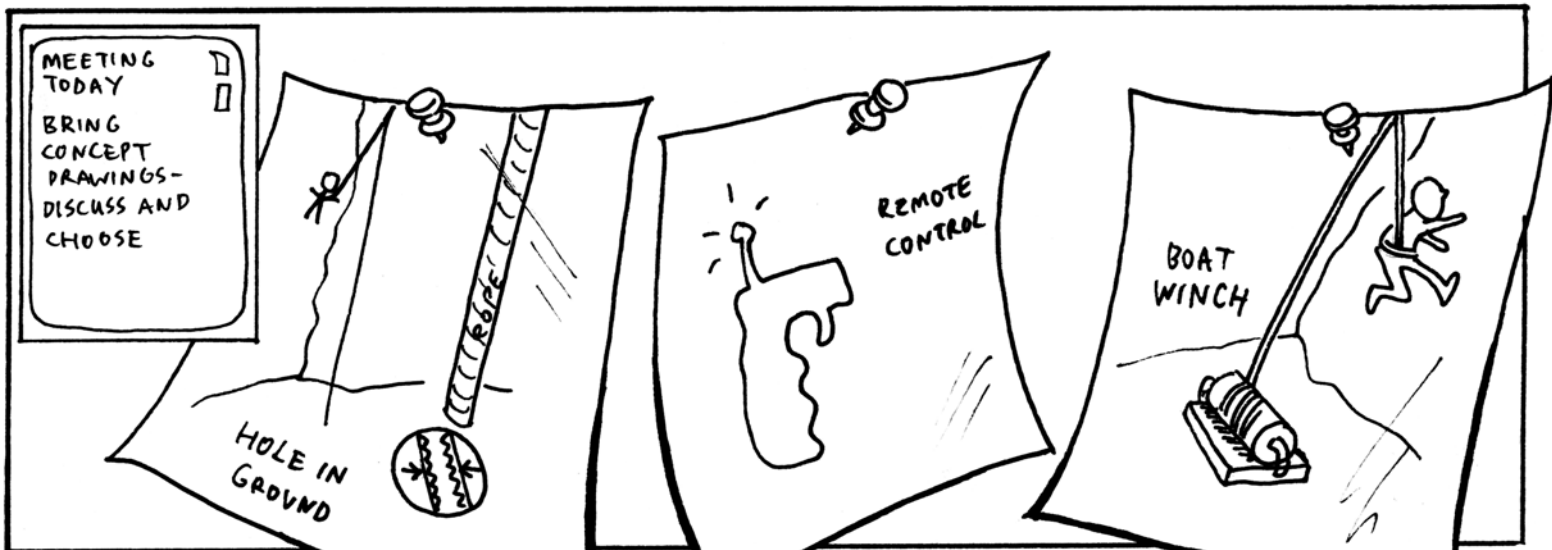
THE ASCF ESTIMATES THAT THERE ARE ONE MILLION ROCKCLIMBERS TODAY. WHY DO YOU CLIMB?

THE COST OF ROCKCLIMBING EQUIPMENT IS ABOUT \$200. IF OUR PRODUCT WAS AT A REASONABLE COST, WOULD YOU WANT ONE?



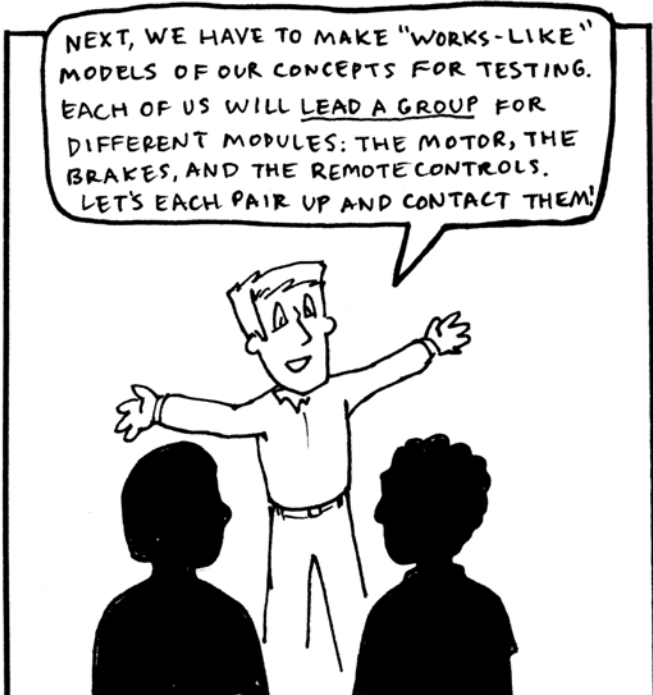




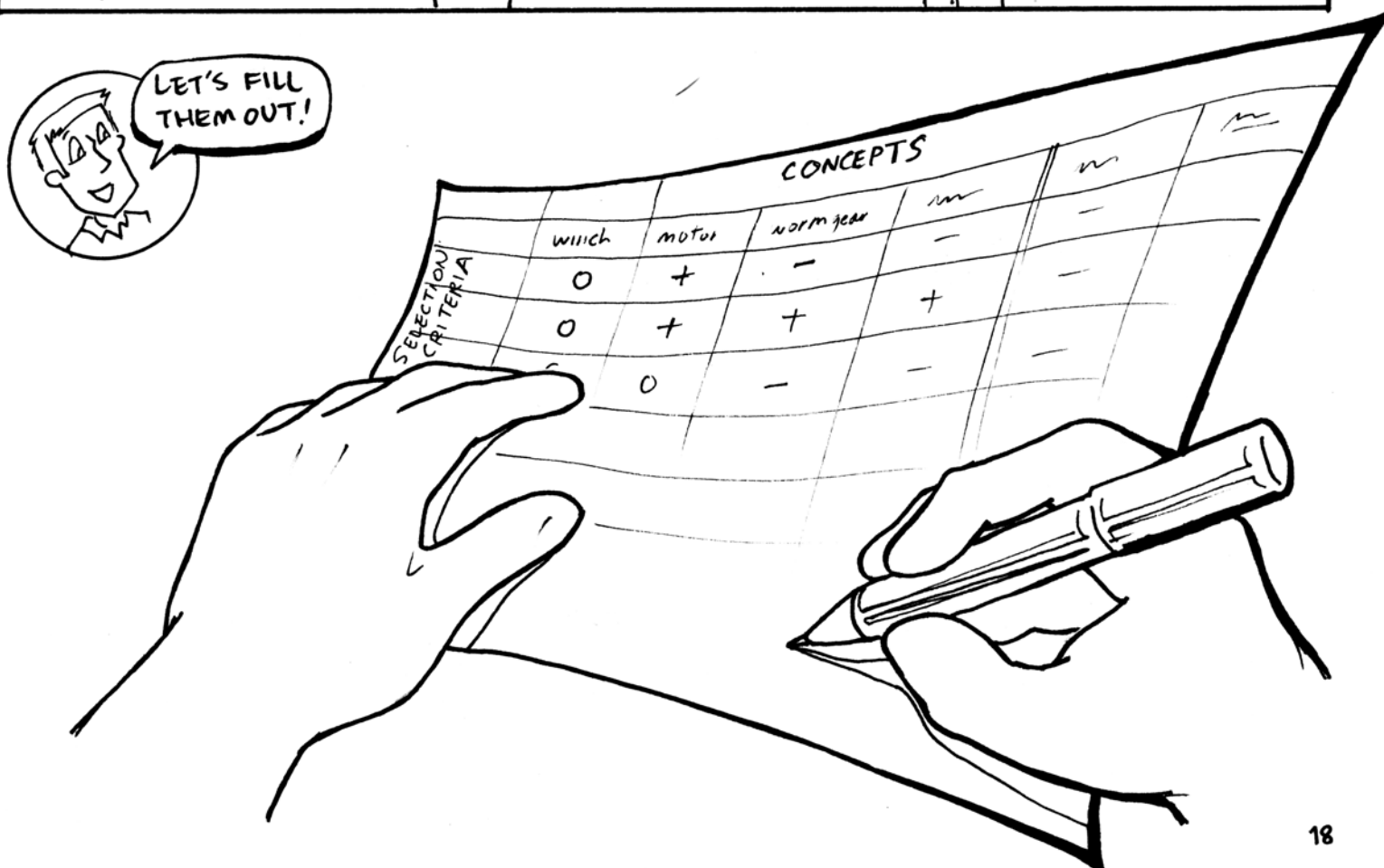
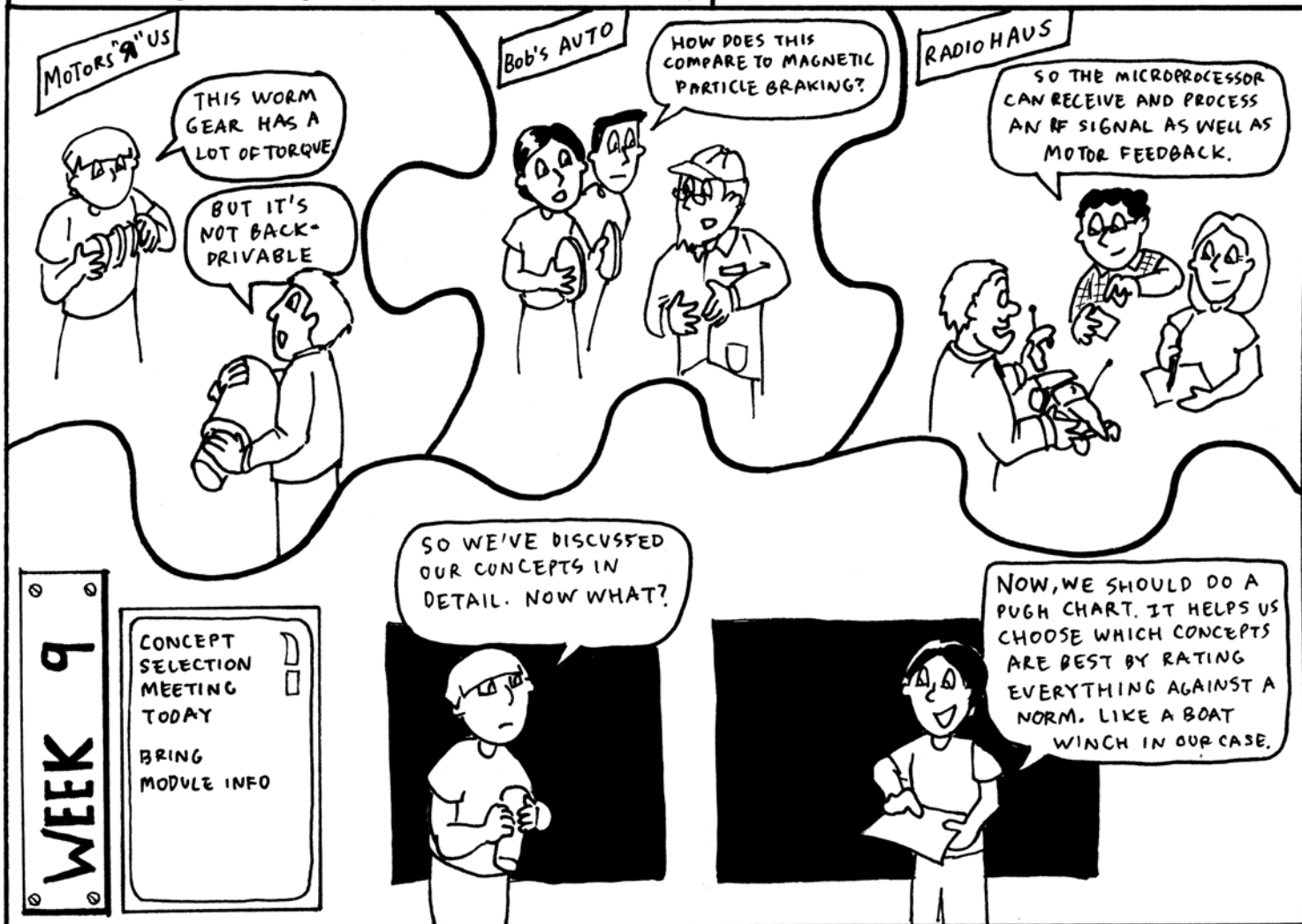




AT THE CONF.
ROOM



EACH SUBGROUP FOCUSES ON A SPECIFIC PART



AND THE TEAM DISCUSSES SOME MORE



THE WORM GEAR IS SAFER - WE DON'T WANT IT TO SLIP.

BUT THE BIGGEST NEED CALLS FOR IT TO BE BACKDRIVABLE



LOOKS LIKE WE'RE SET ON A REMOTE CONTROL DEVICE WITH A DC SERVOMOTOR, A MAGNETIC PARTICLE BRAKE, AND AN OVERSPEED CLUTCH.

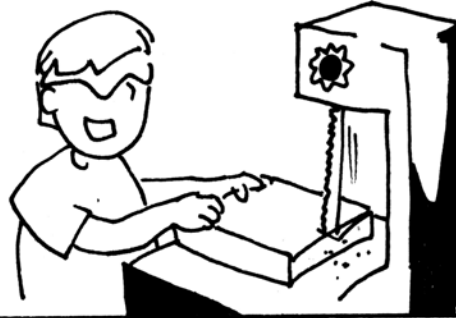
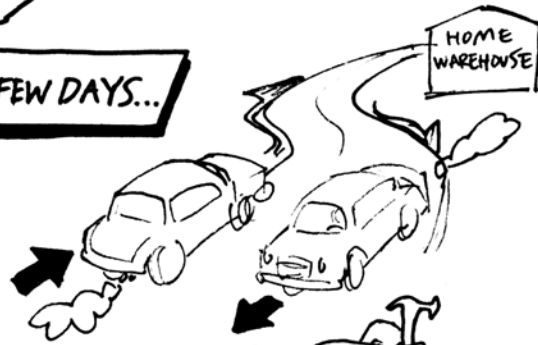
SO HANNA, WE ACTUALLY HAVE TO MAKE THIS WORK?



I HOPE YOU DIDN'T HAVE PLANS FOR THIS WEEKEND!



THE NEXT FEW DAYS...



I ADMIT IT, I NOW OFFICIALLY HAVE NO SOCIAL LIFE.



SORRY MIKE, I'LL CALL YOU BACK - I'M KINDA BUSY NOW.



MACHINING'S FUN! WEEEEEE!!



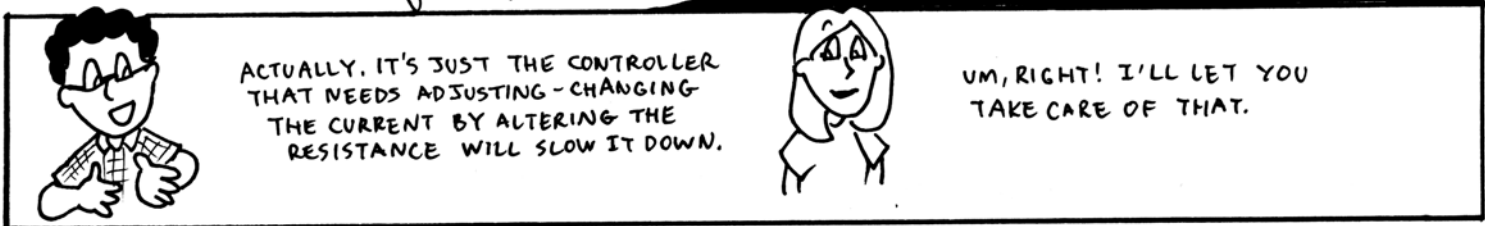
SHOOT. THERE'S A BIG TOURNAMENT THIS WEEKEND. WHICH TEAM COMES FIRST?

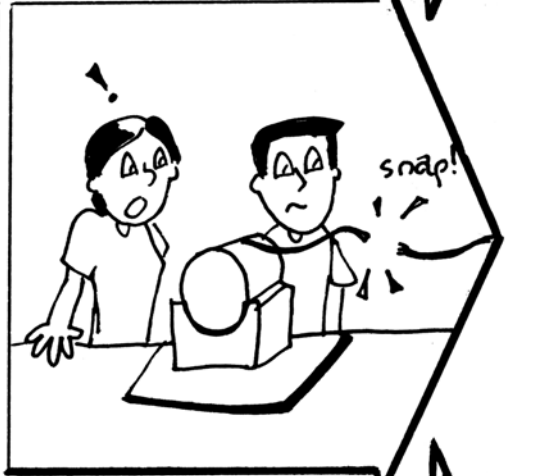
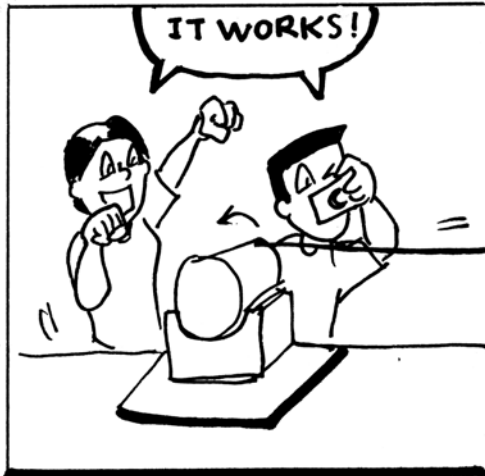
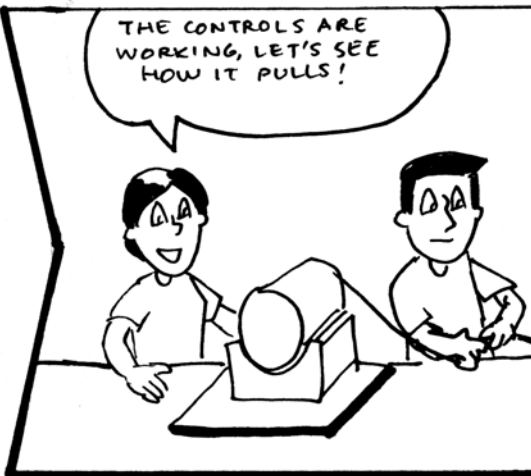
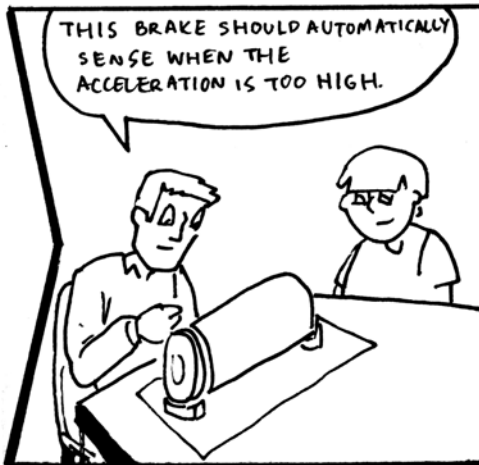
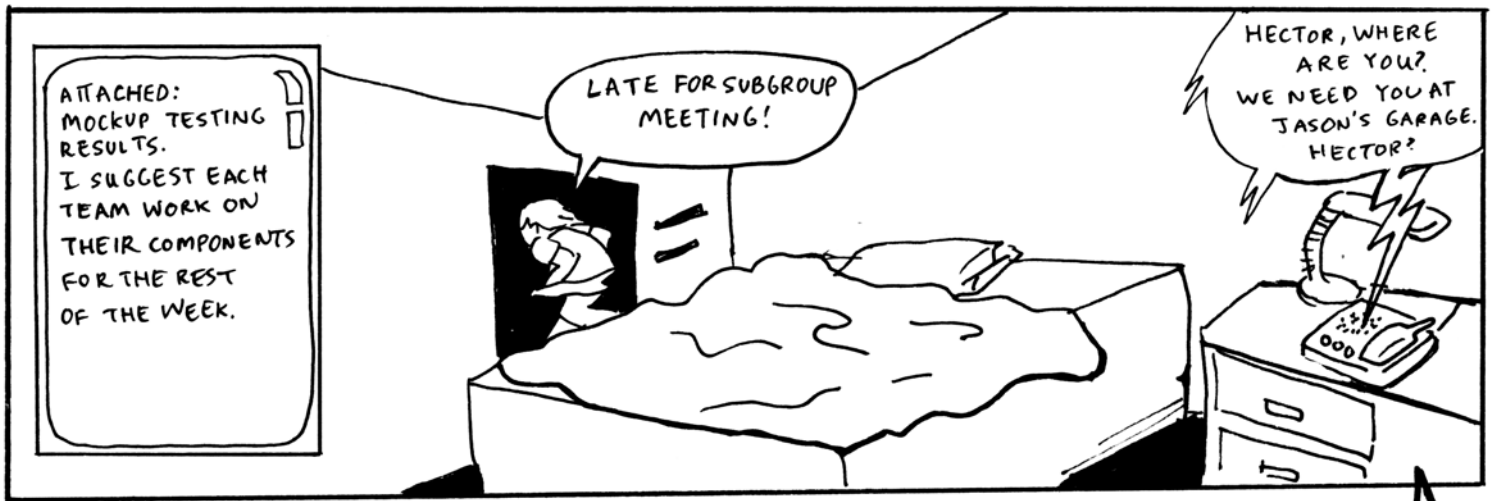
AM I THE ONLY ONE WHO KNOWS ELECTRONICS?



I HATE THIS CLASS. I LOVE THIS CLASS. I -







LATER THAT WEEK

... AND THEN HANNA SAYS,
"NO BRIAN, YOU CAN'T EAT
THE DRILLBITS!" HAHAHA!



ON JENNY'S DATE WITH MIKE

HEY, THEY CAME!



AT HECTOR'S CONCERT

WEEK 11

MEETING TODAY
DISCUSS
PRODUCT
ARCHITECTURE
IMPORTANT!



ALRIGHT, LET'S
SEE HOW OUR
MODULES ALL
FIT TOGETHER.

HECTOR, WHAT
IS THAT?

IT'S MY T-SQUARE!
DIDN'T YOU SAY SOMETHING
ABOUT ARCHITECTURE IN
YOUR EMAIL?



HECTOR, "PRODUCT ARCHITECTURE" IS
HOW ALL THE PARTS OF THE PRODUCT
WORK TOGETHER! HAVE YOU
EVER HEARD OF "MODULARITY?"



my T-square
comes apart!



ANYWAY...
WE'VE DESIGNED THE
BRAKE SO IT FITS
RIGHT HERE.



WHAT?!



BRIAN, THE BRAKE
DOESN'T GO THERE!
THAT'S WHERE THE
CLUTCH GOES!



LANCE, THAT MAKES
NO SENSE. OBVIOUSLY,
THE CLUTCH IS
MOUNTED TO THE
SPOOL END.





WHY DIDN'T THEY DISCUSS THIS? THAT'S JUST COMMON SENSE IF THOSE 2 MODULES WORK TOGETHER.



HAHA! AT LEAST NONE OF OUR COMPONENTS HAVE ANY OF THOSE PROBLEMS.



WOW, THIS HAS LASTED TWO HOURS ALREADY. I'M GOING TO MISS MY FRIEND'S PARTY.



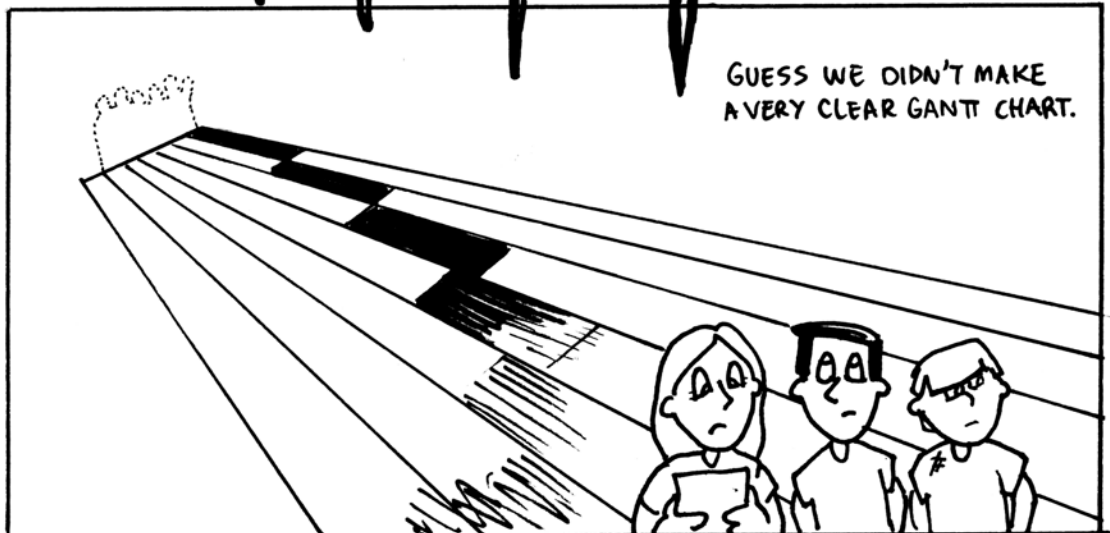
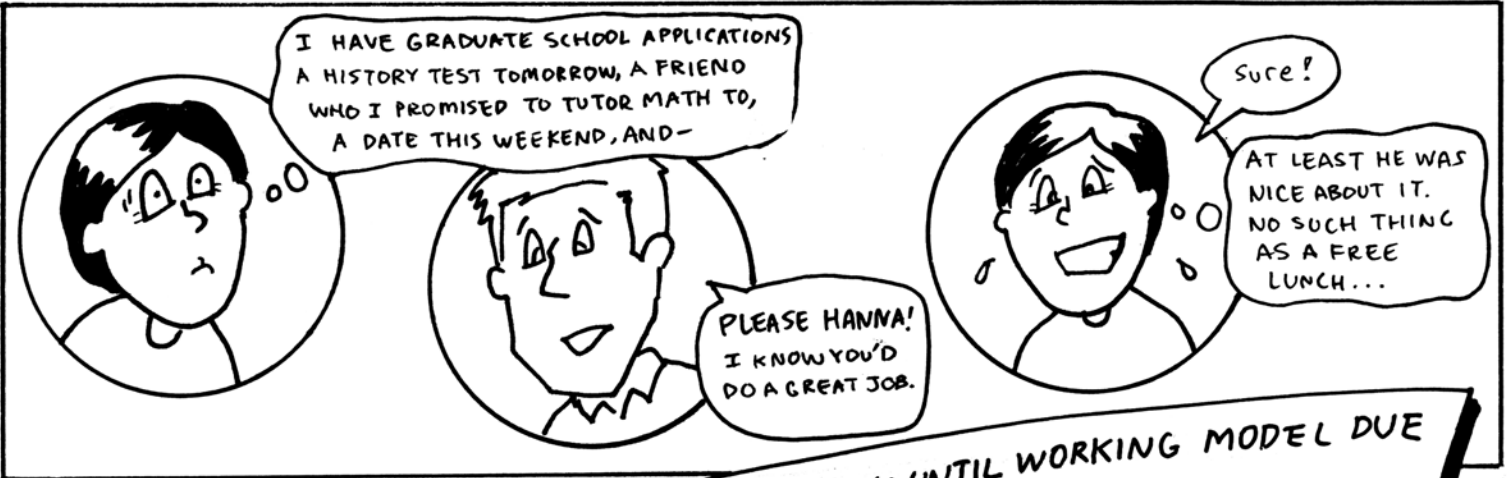
HMM... I WONDER IF JENNY AND MY MODULES ALSO HAVE SYSTEM ARCHITECTURE ISSUES.

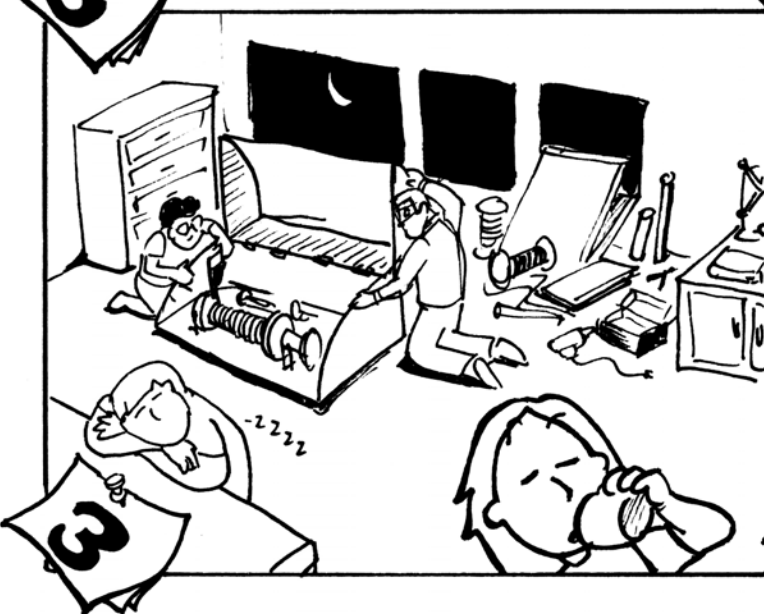
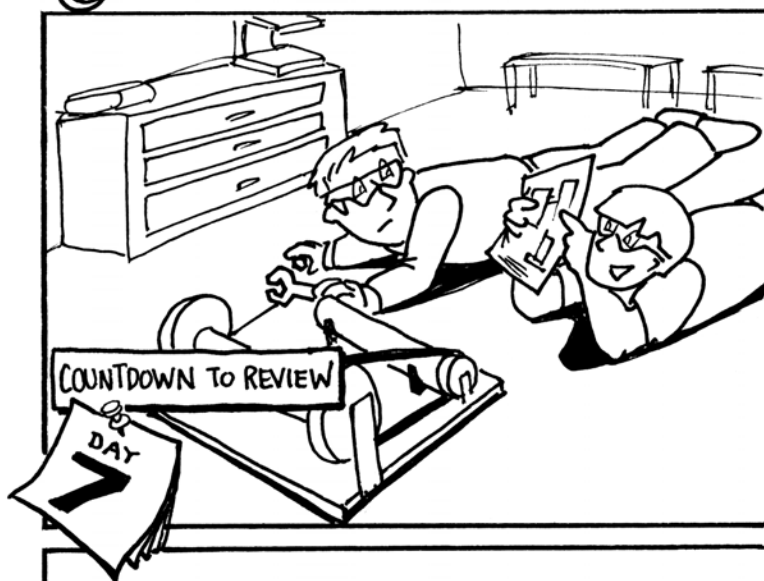
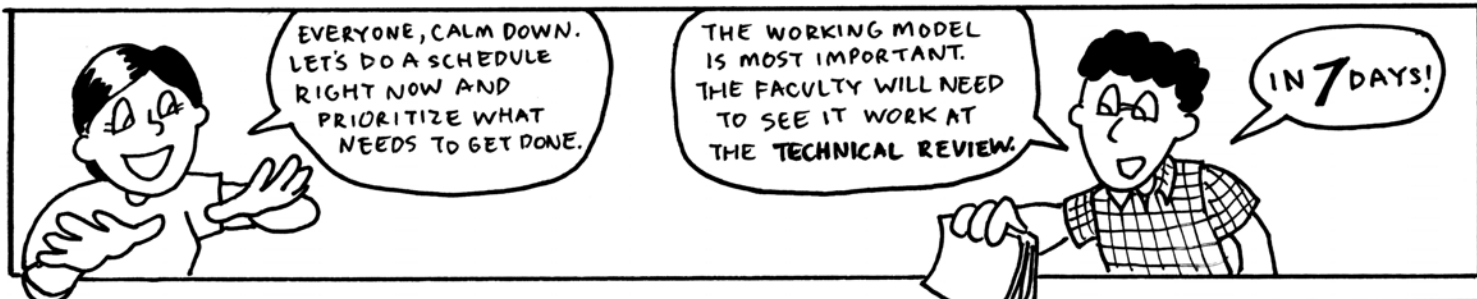


I DIDN'T REALIZE OUR SEPARATE PARTS WERE SO INTEGRATED.

AND I WAS UNDER THE IMPRESSION YOURS HAD A DIFFERENT PURPOSE.

THE NEXT DAY





WEEK 13

THE TECHNICAL REVIEW IS HELD AT ROCK CITY

HEY! THE FACULTY ARE HERE!



EVERYTHING'S GOOD!

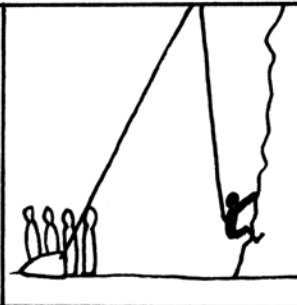


WELCOME PROFESSORS! LANCE, THE AVID ROCK CLIMBER IN OUR GROUP, WILL DEMONSTRATE OUR PRODUCT.

I'M READY!



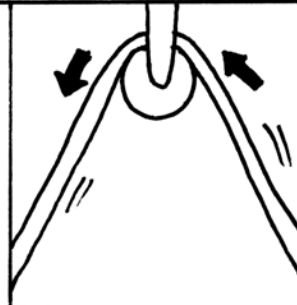
LANCE CHECKS HIS EQUIPMENT



THE FACULTY AND TEAM WATCH



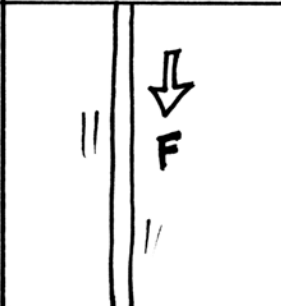
HE CLIMBS HIGHER



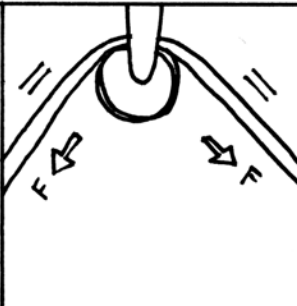
THE ROPE IS AUTO-PULLED SO THERE IS NO SLACK



LANCE LETS GO



THE FORCE ON THE ROPE INCREASES



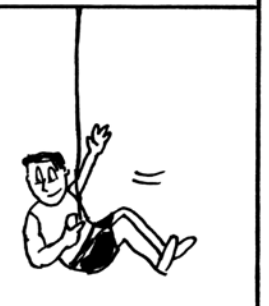
THE BELAYER BRAKES



LANCE STAYS IN THE AIR



SIGHS RELIEF

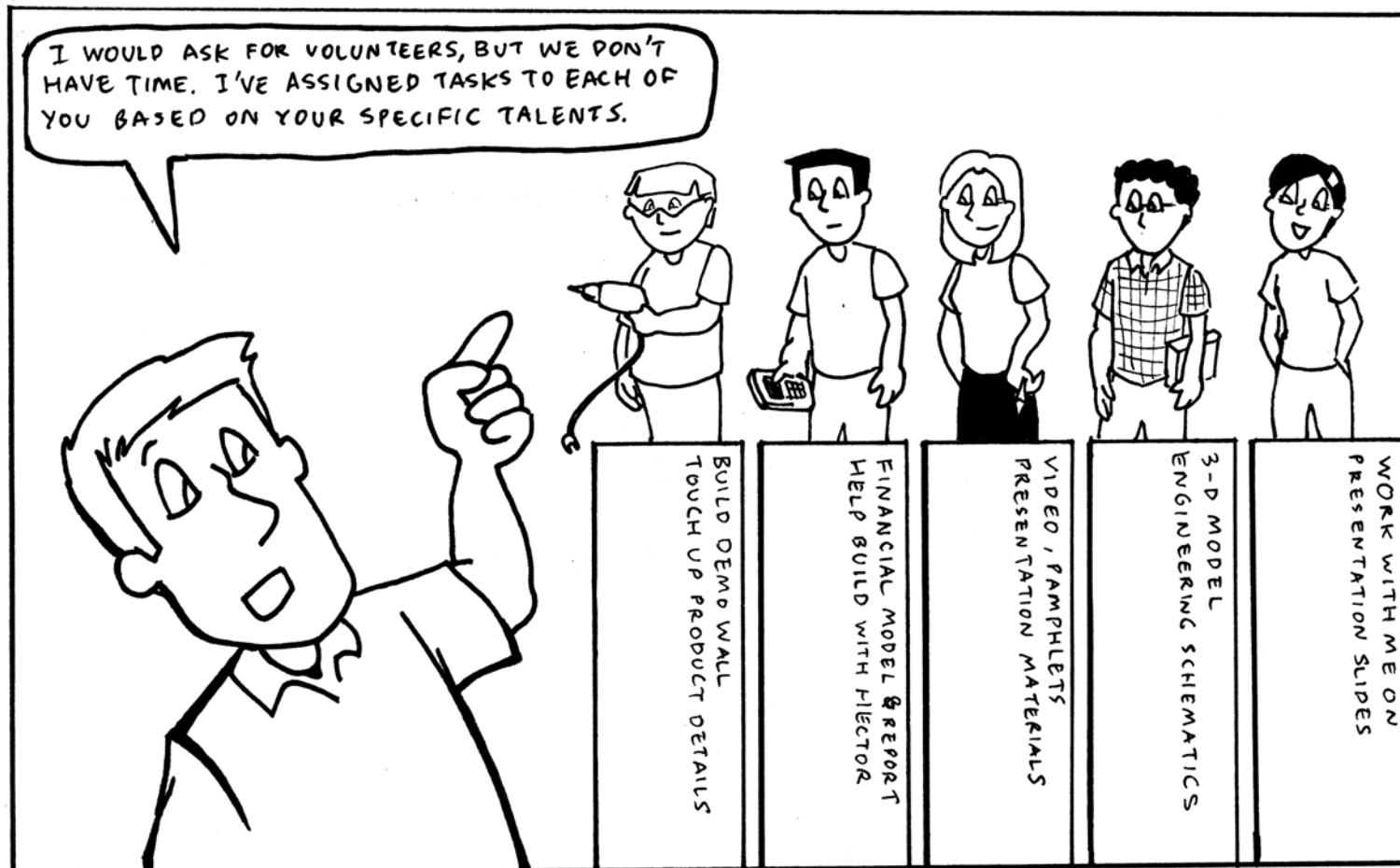
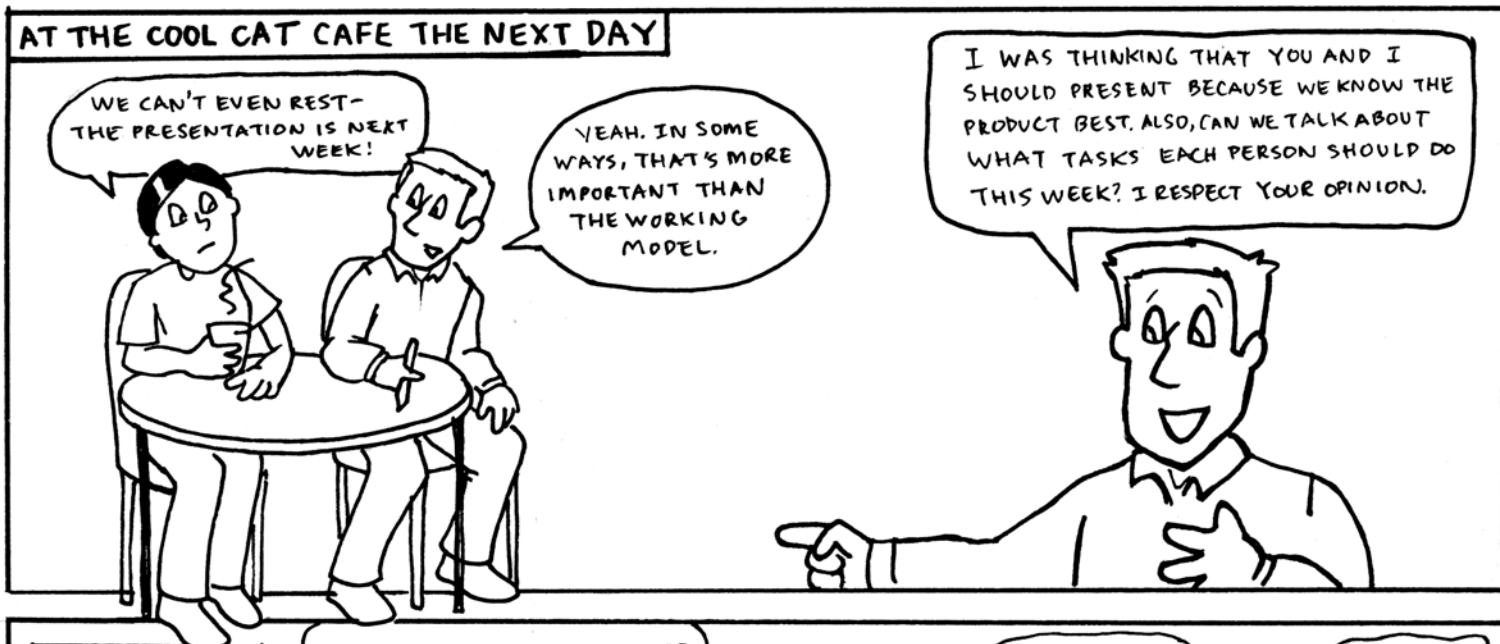


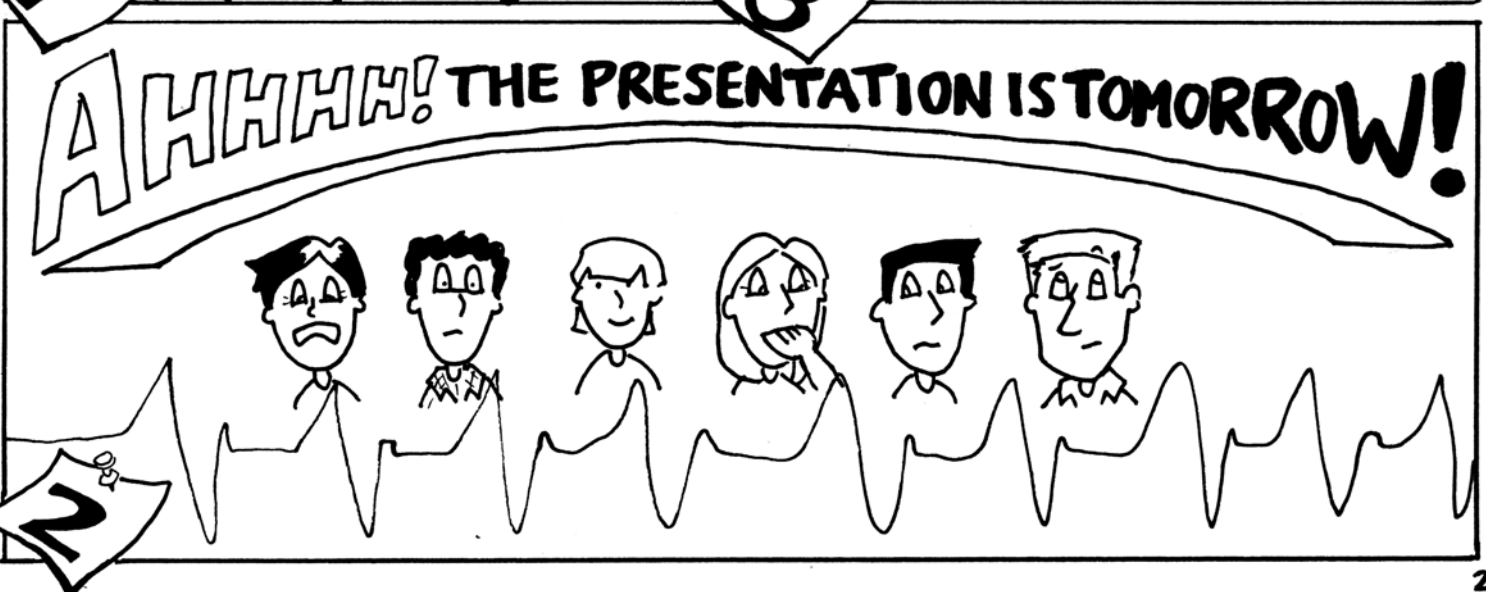
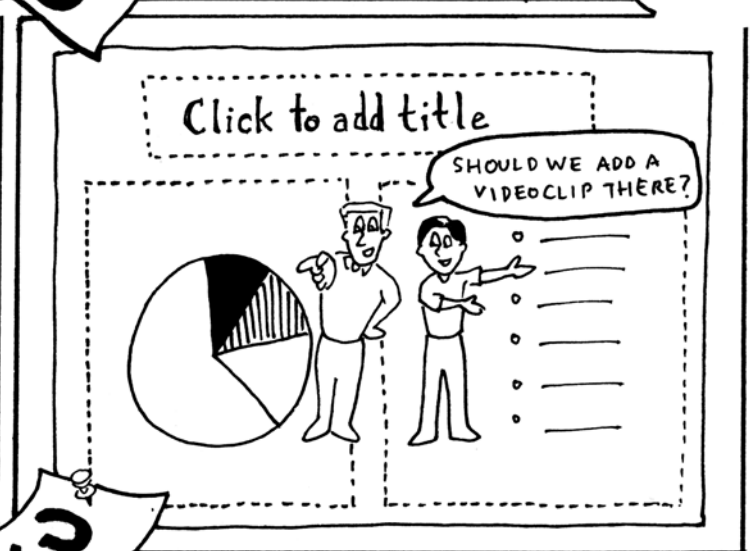
AND PASSES THE REMOTE TO BE LET DOWN SLOWLY.

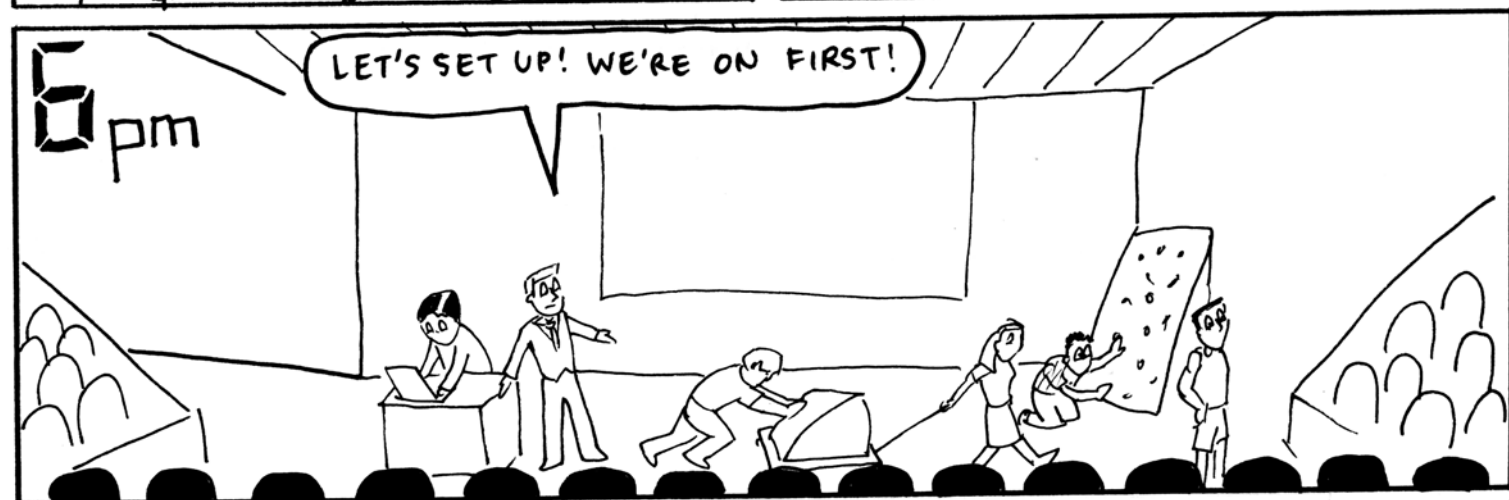
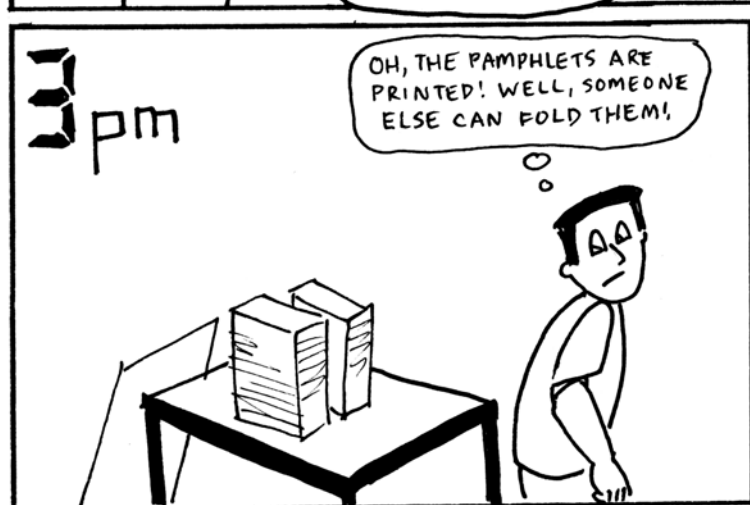
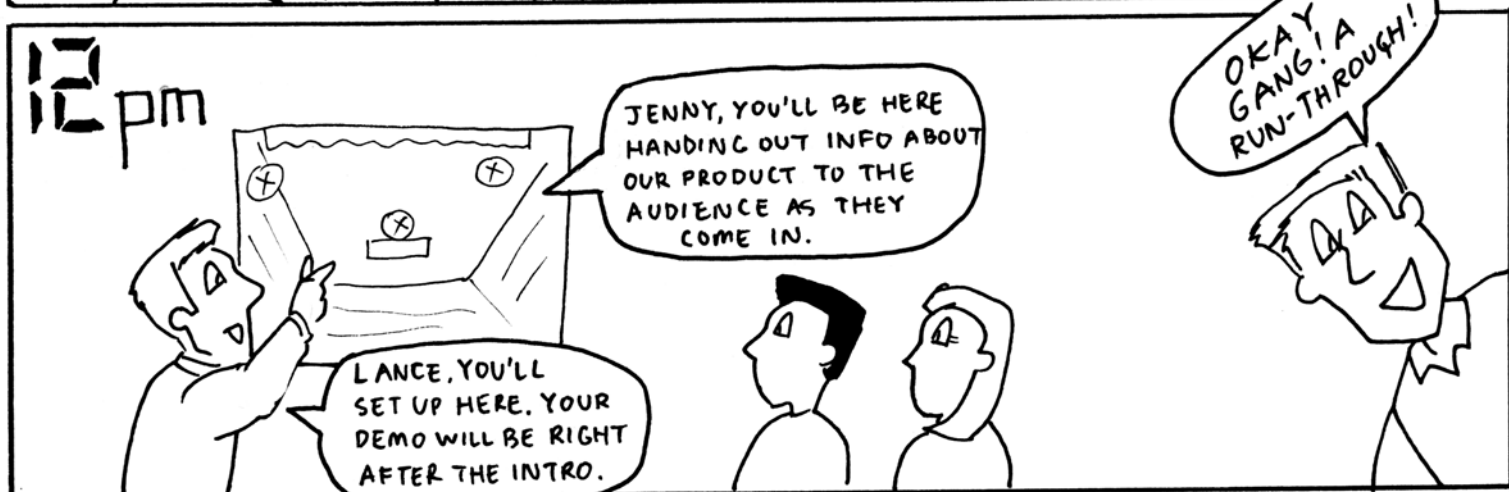
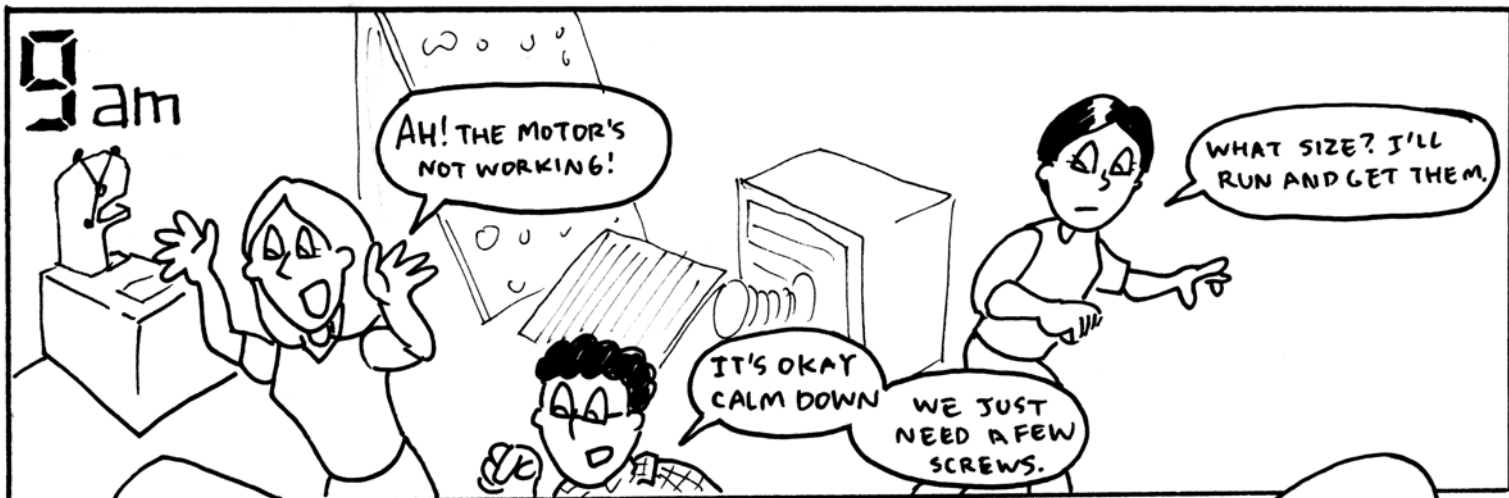
IT WORKS!!



AT THE COOL CAT CAFE THE NEXT DAY







6:10

BRIAN, LET'S PRACTICE ON STAGE

OVER HERE, OKAY, STOP! WHAT HANNA?

6:17

FINE, I'LL JUST PRACTICE MYSELF.

6:25

6:33

SORRY HANNA, I'M READY NOW. LET'S RUN IT THROUGH.

OH NO! IT'S NOT PLAYING THE VIDEO!

6:55

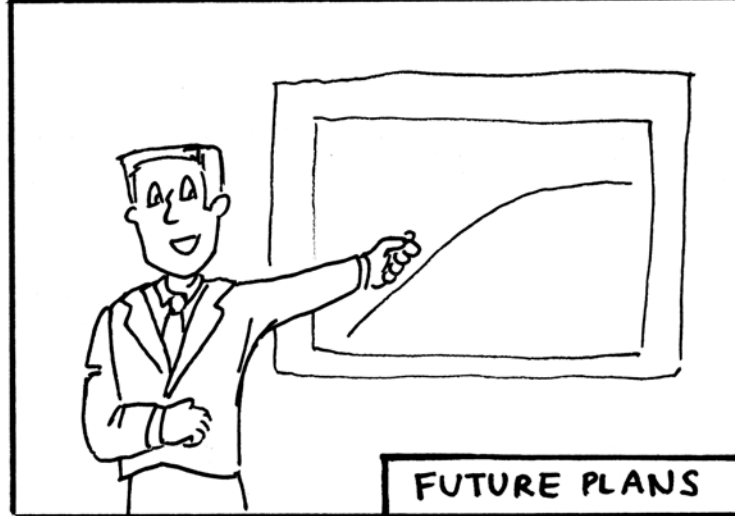
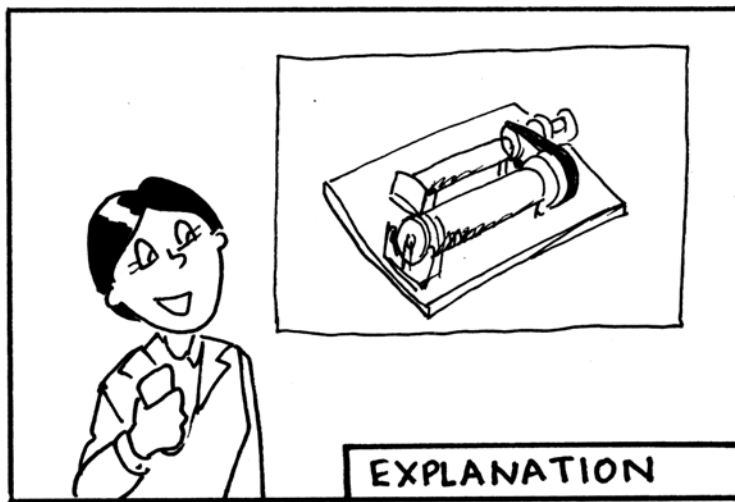
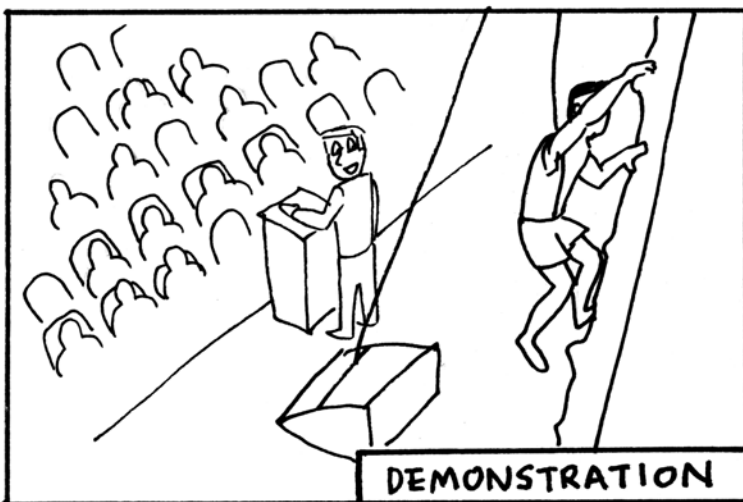
WHEW!
IT WORKS!

7:00

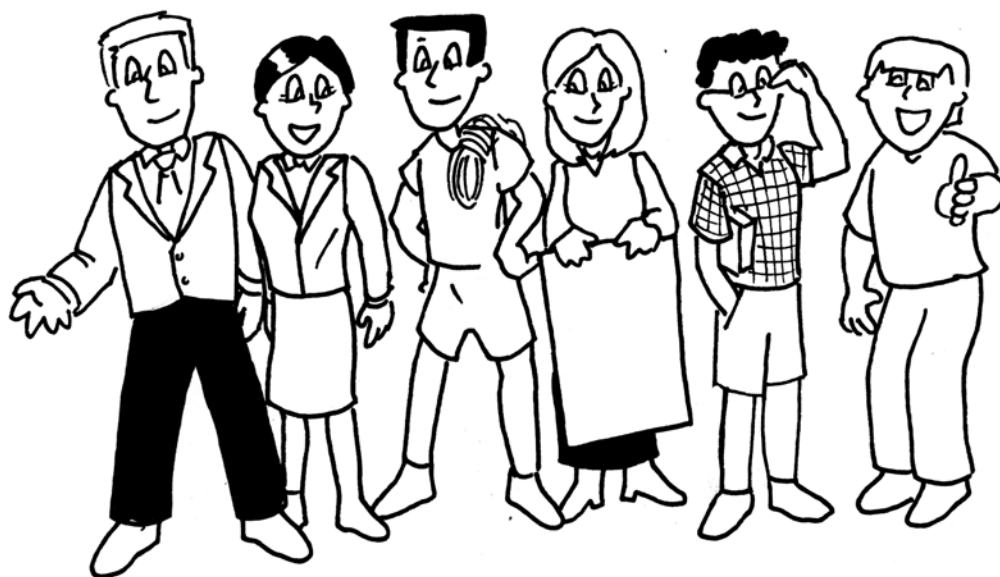
YELLOW TEAM-
YOU'RE ON!

gulp!

WELCOME EVERYONE. I'M BRIAN AND THIS IS HANNA.
WE ARE REPRESENTING THE YELLOW TEAM...



ANY QUESTIONS?





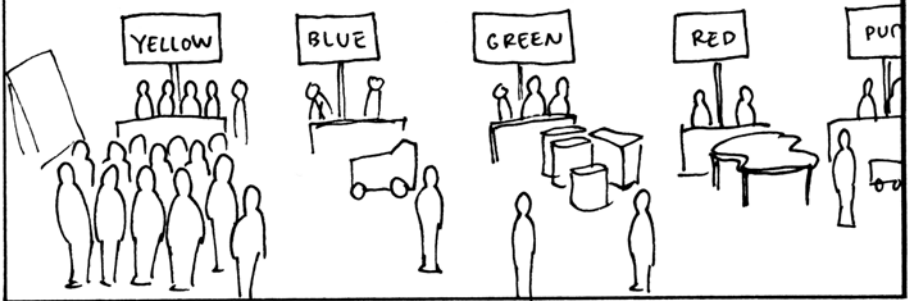
YES, THE PRODUCT CONFORMS
TO ALL INDUSTRY SAFETY
CODES, SUCH AS...

WELL ACTUALLY, THE
MAGNETIC PARTICLE
BRAKE WORKS BY...

OUR CALCULATED
RETURN ON INVESTMENT
IS...



AFTER THE PRESENTATION



I'M REALLY GLAD
I GOT TO WORK
WITH ALL OF YOU

WHAT ARE YOU
DOING AFTER
GRADUATION?

NEVER THOUGHT
I'D LEARN SO MUCH...
ABOUT PEOPLE

SO I WAS TALKING
WITH THIS PATENT
ATTORNEY LAST WEEK,

I CAN'T BELIEVE
WE WERE PUBLISHED
IN THAT NATIONAL
SCIENCE MAGAZINE!

HEY HANNA, YOU
FREE FRIDAY NIGHT?

