THE CASE OF THE STEADY HAND!

YOU WANT TO BE A SCIENTIST?

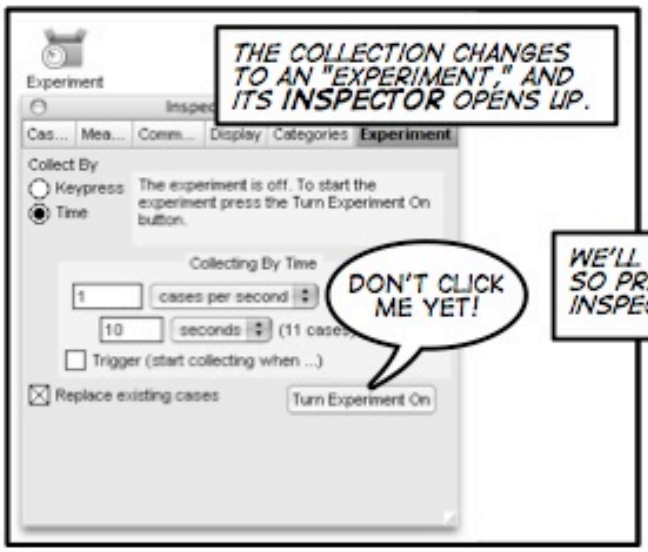
DO EXPERIMENTS WITH FATHOM?

OF COURSE YOU DO. WE'LL START WITH SOMETHING BIZARRE AND UNEXPECTED—DRUMMING.

YOU GOTTA ASK YOURSELF: **HOW STEADY IS YOUR HAND?**

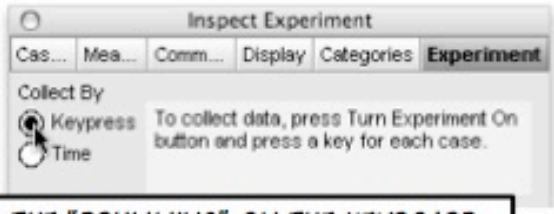
START BY DRAGGING A COLLECTION OFF THE SHELF.

RIGHT-CLICK ON THE COLLECTION AND CHOOSE **CREATE EXPERIMENT**.



THE COLLECTION CHANGES TO AN "EXPERIMENT," AND ITS **INSPECTOR** OPENS UP.

DON'T CLICK ME YET!



WE'LL DO THE "DRUMMING" ON THE KEYBOARD, SO PRESS THE **KEYPRESS** BUTTON IN THE INSPECTOR.

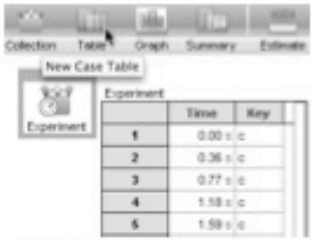
AND THEN TURN THE EXPERIMENT ON.

NOW!

WHEN YOU'RE READY, PRESS A KEY 25 TIMES, KEEPING A STEADY RHYTHM.

NOW YOUR EXPERIMENT IS FULL OF DATA. TURN THE EXPERIMENT OFF.

YOU CAN EVEN CLOSE THE INSPECTOR.



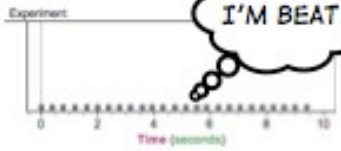
MAKE A TABLE FOR YOUR EXPERIMENT. IF YOU DON'T KNOW HOW, ASK! (OR JUST FIGURE IT OUT)

NOW YOU CAN SEE THE DATA: **TIME** AND **KEY** FOR EVERY KEYPRESS.

NOW MAKE A **GRAPH** OF **TIME**.

(DRAG A GRAPH OFF THE SHELF AND THEN DRAG TIME TO THE AXIS)

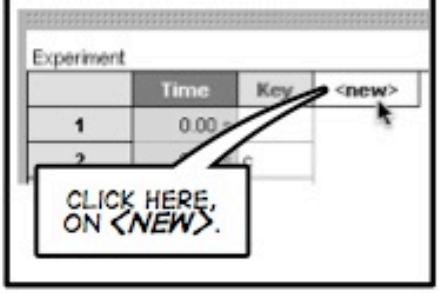
WERE YOU STEADY? LOOKS LIKE IT, BUT LET'S SEE...

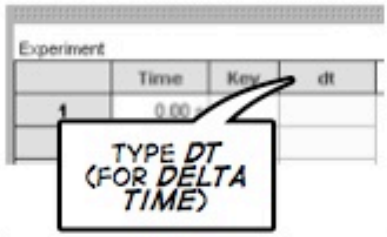


I'M BEAT.

HOW CAN WE TELL HOW STEADY THE BEATS ARE?

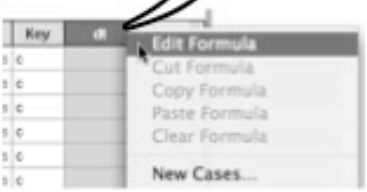
WE NEED TO CALCULATE THE TIME **BETWEEN** THE BEATS.





YOU MADE A NEW COLUMN.

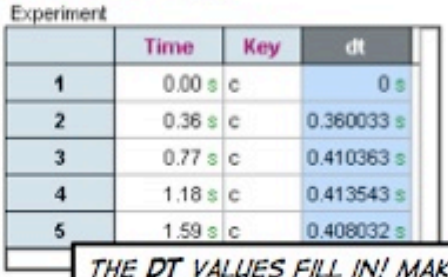
RIGHT-CLICK ON DT, AND CHOOSE EDIT FORMULA.



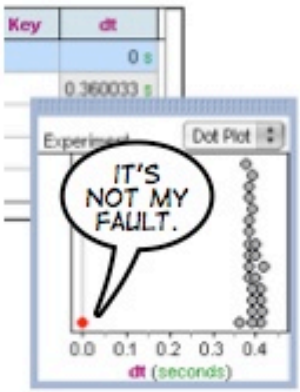
WE WANT THE COMPUTER TO DO ALL THE CALCULATION...

...SO ENTER THIS FORMULA INTO THE EDITOR.

WHEN YOU CLICK **OK**,



THE **DT** VALUES FILL IN! MAKE A GRAPH!

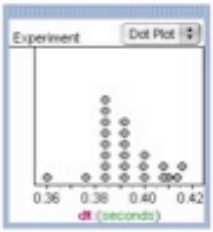


ALL OF THE **DT** VALUES ARE PRETTY CLOSE TO 0.4 SECONDS...

...EXCEPT FOR MR. BOGUS, AT ZERO.

EDIT THE FORMULA FOR **DT** LIKE THIS:

AND RESCALE THE GRAPH:



IF YOU DO IT AGAIN (OPEN THE INSPECTOR AND PRESS **TURN EXPERIMENT ON**), HOW WILL YOU KNOW IF YOU GOT BETTER?

IF YOU HAVE **TWO** DRUMMERS AND THEIR GRAPHS, HOW CAN YOU TELL WHICH ONE IS STEADIER?