

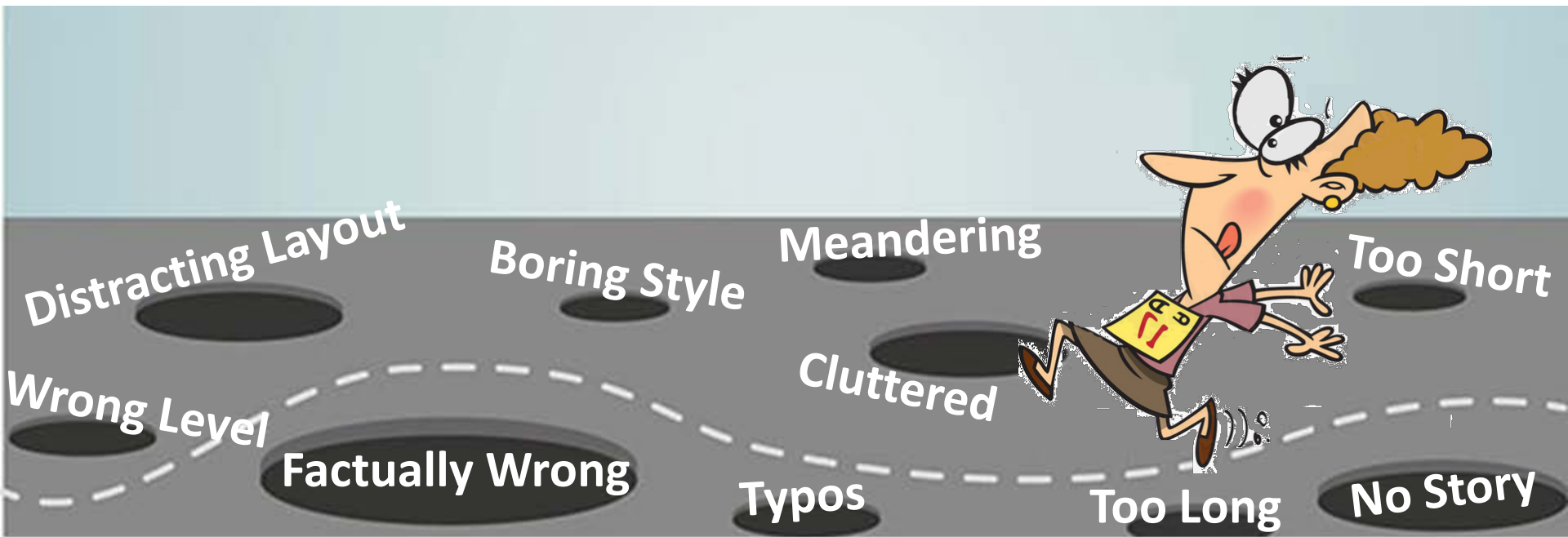


*Advice on  
Scientific Presentations*

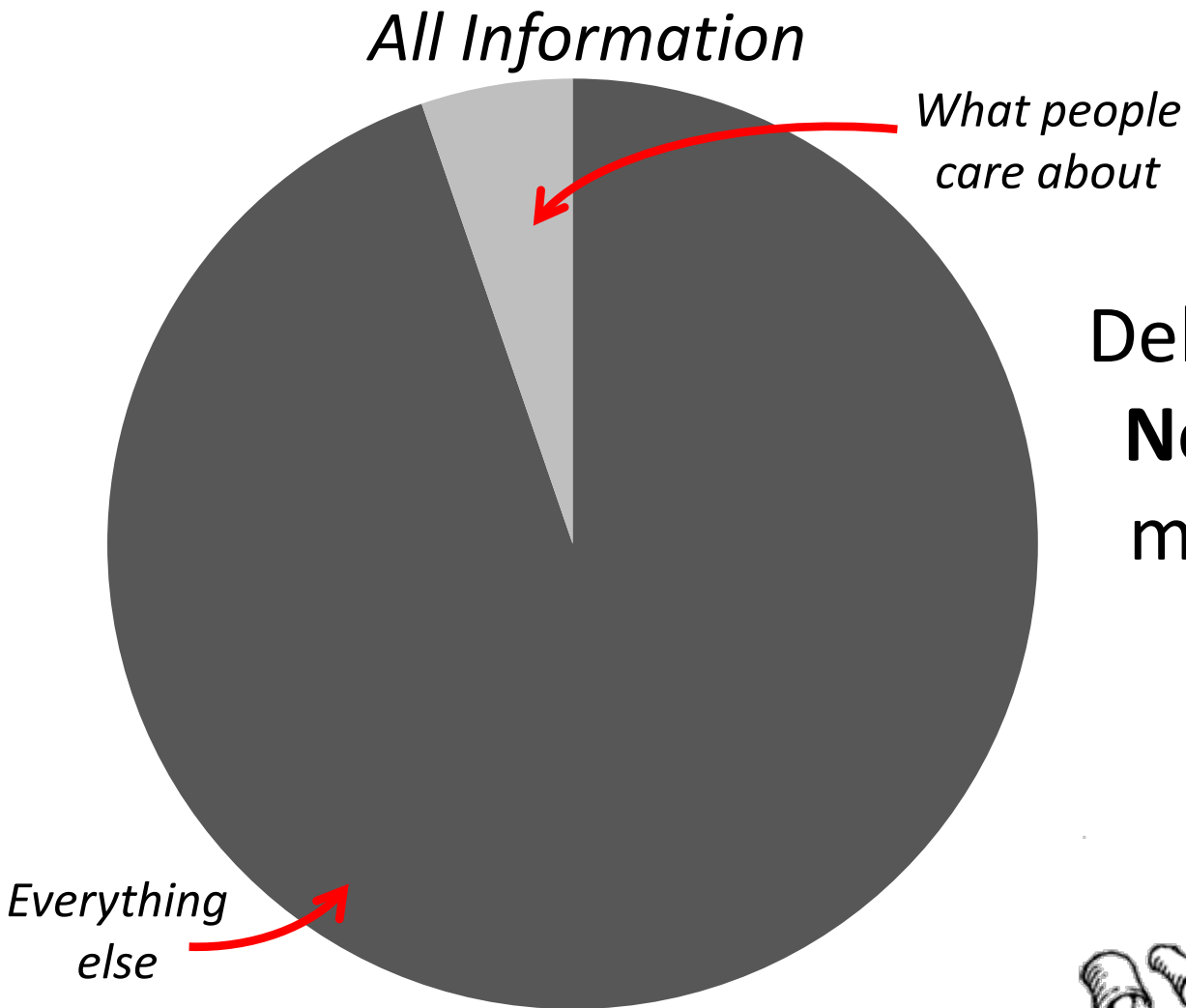
Zach Meisel  
PHYS 7501, Fall 2021

*\*see the course webpage for this and  
other advice on scientific presentations*

There is no *right way* to give a presentation  
...but there are plenty of wrong ones



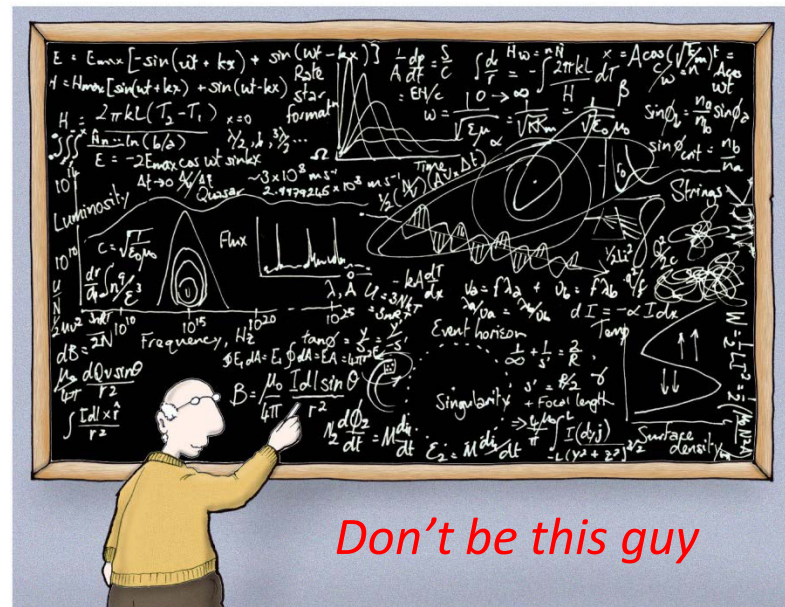
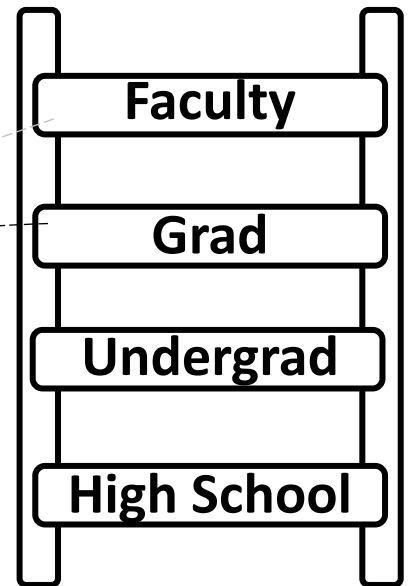
# Before you start, decide on your story



Deliver the highlights.  
**No one** cares about  
most of the details.



# Decide who will make-up the audience, then go one level down



*Don't be this guy*

Astrophysics made simple

*...or else this will happen*



"I really enjoyed your presentation.  
During the third hour, my spirit  
left my body and went to the beach!"

# Tell your story with key figures

Kidszone Classroom

Name \_\_\_\_\_

Date \_\_\_\_\_

Title: \_\_\_\_\_

Author: \_\_\_\_\_

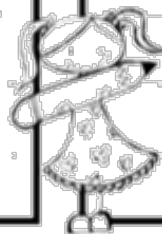
Beginning

**Problem:**



Middle

**Method to Solve Problem:**



End

**Results:**

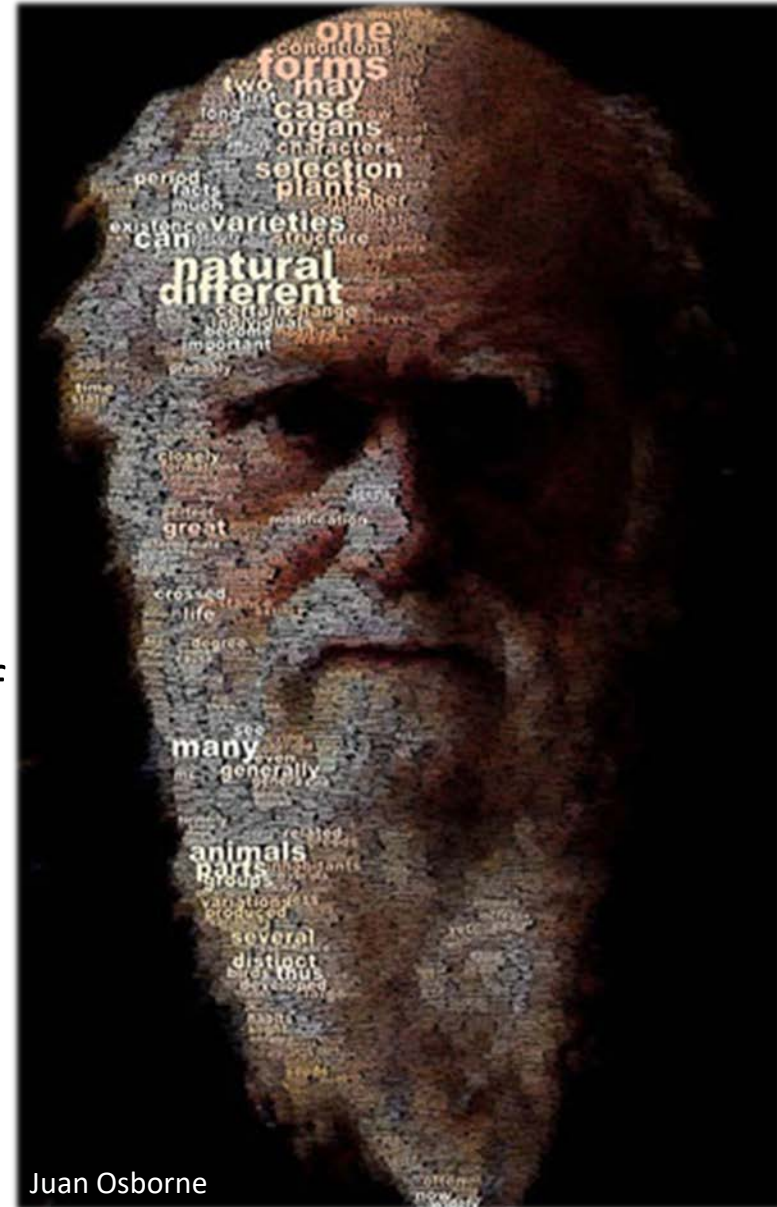


# RETELLING STORY MAP



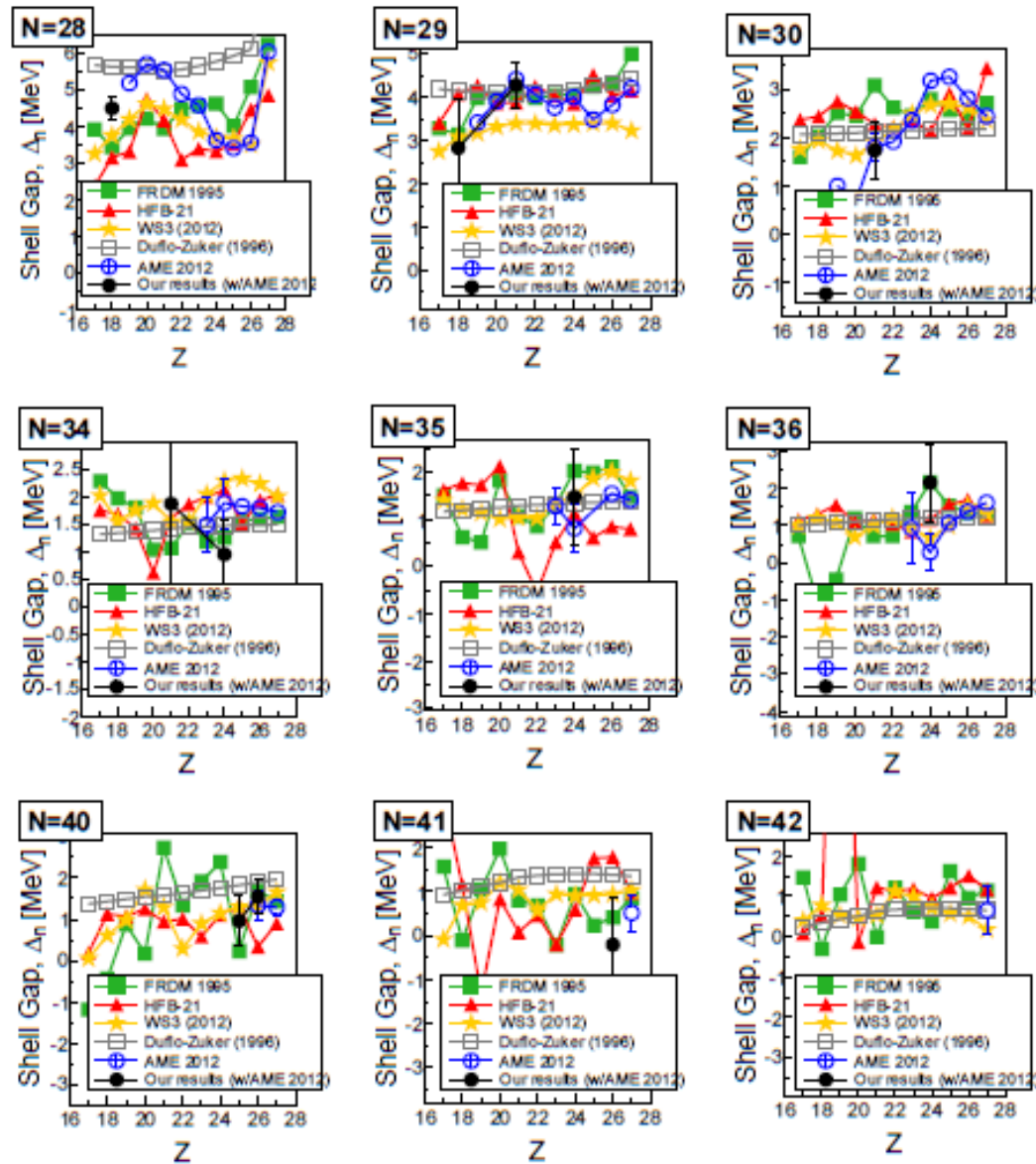
# Do not use walls of text & avoid bullets

- This portion of the slide is worse than useless.
- It isn't possible for you to simultaneously read this and listen to me and to understand both.  
So I'm either wasting my time talking to you or wasting my time typing this.
- As a speaker I will likely fall into the trap of reading this text to you, simultaneously boring you and me, likely disengaging both of our brains.
- On top of all of that, this wall of text is completely hideous.
- The only **Acceptable Use of Bullets** contains:
  - **Key facts/figures**
  - **Short, notable names/phrases**



Juan Osborne

# Overly complex figures are useless too



...as are large tables (use a graph instead!)

Isotope	This experiment	AME2012	FRDM	HFB-21	DZ	WS3
$^{48}\text{Ar}^\dagger$	-22 280(310)	—	-21 240	-21 900	-21 889	-22 044
$^{49}\text{Ar}^\dagger$	-17 800(1100)	—	-14 880	-16 110	-15 648	-16 406
$^{52}\text{Sc}$	-40 300(520)	-40 167(142)	-39 360	-40 110	-39 241	-40 400
$^{53}\text{Sc}$	-38 170(570)	-38 107(270)	-36 840	-38 480	-37 148	-38 861
$^{54}\text{Sc}$	-33 750(630)	-33 599(363)	-32 030	-33 980	-32 623	-34 139
$^{55}\text{Sc}$	-30 520(580)	-29 977(463)	-29 170	-31 320	-29 597	-30 758
$^{56}\text{Sc}^\dagger$	$-24\,850(590)^{+0}_{-540}$	—	-23 840	-25 230	-24 425	-25 146
$^{57}\text{Sc}^\dagger$	-21 000(1300)	—	-20 440	-22 550	-20 627	-21 115
$^{59}\text{Cr}$	-48 540(440)	-47 891(244)	-48 680	-49 160	-48 013	-48 451
$^{60}\text{Cr}$	-47 440(460)	-46 504(213)	-47 910	-48 200	-46 732	-46 779
$^{61}\text{Cr}$	-43 080(510)	-42 455(129)	-42 700	-43 710	-42 534	-42 461
$^{62}\text{Cr}$	-40 890(490)	-40 895(148)	-41 180	-41 960	-40 630	-40 445
$^{63}\text{Cr}$	-35 940(430)	-35 722(459)	-36 030	-37 290	-35 962	-35 773
$^{64}\text{Cr}^\dagger$	-33 480(440)	—	-34 950	-34 730	-33 545	-33 347
$^{67}\text{Mn}^\dagger$	-34 090(620)	—	-34 480	-34 960	-33 141	-33 294
$^{67}\text{Fe}$	-45 190(430)	-46 069(218)	-46 530	-46 940	-45 991	-45 577
$^{68}\text{Fe}$	-43 620(430)	-43 825(365)	-45 360	-45 170	-43 853	-43 665
$^{69}\text{Fe}^\dagger$	-39 350(600)	—	-40 230	-40 390	-39 156	-39 380



...and excessive equations  
(unless schematically broken-down)

**Not OK**

$$\gamma = \frac{c}{2m}$$

$$A = \frac{F_0 / m}{\sqrt{[\omega_0^2 - \omega^2]^2 + 4\gamma^2 \omega^2}}$$

$$\phi = \tan^{-1} \left[ \frac{c\omega}{k - m\omega^2} \right] - \phi_d$$

$$x(t) = A_h e^{-\gamma t} \sin(\omega' t + \phi_h) + A \cos(\omega t - \phi)$$

$$A_h = \frac{x_0 - A \cos \phi}{\sin \phi_h}$$

$$\omega' = \sqrt{\omega_0^2 - \gamma^2}$$

$$\omega_0 = \sqrt{\frac{k}{m}}$$

$$\phi_h = \tan^{-1} \left[ \frac{\omega'(x_0 - A \cos \phi)}{v_0 + \gamma(x_0 - A \cos \phi) - A\omega \sin \phi} \right]$$

**OK**

THE DRAKE EQUATION

NUMBER OF COMMUNICATING CIVILIZATIONS IN OUR GALAXY

PROBABILITY THAT LIFE ON A PLANET BECOMES INTELLIGENT

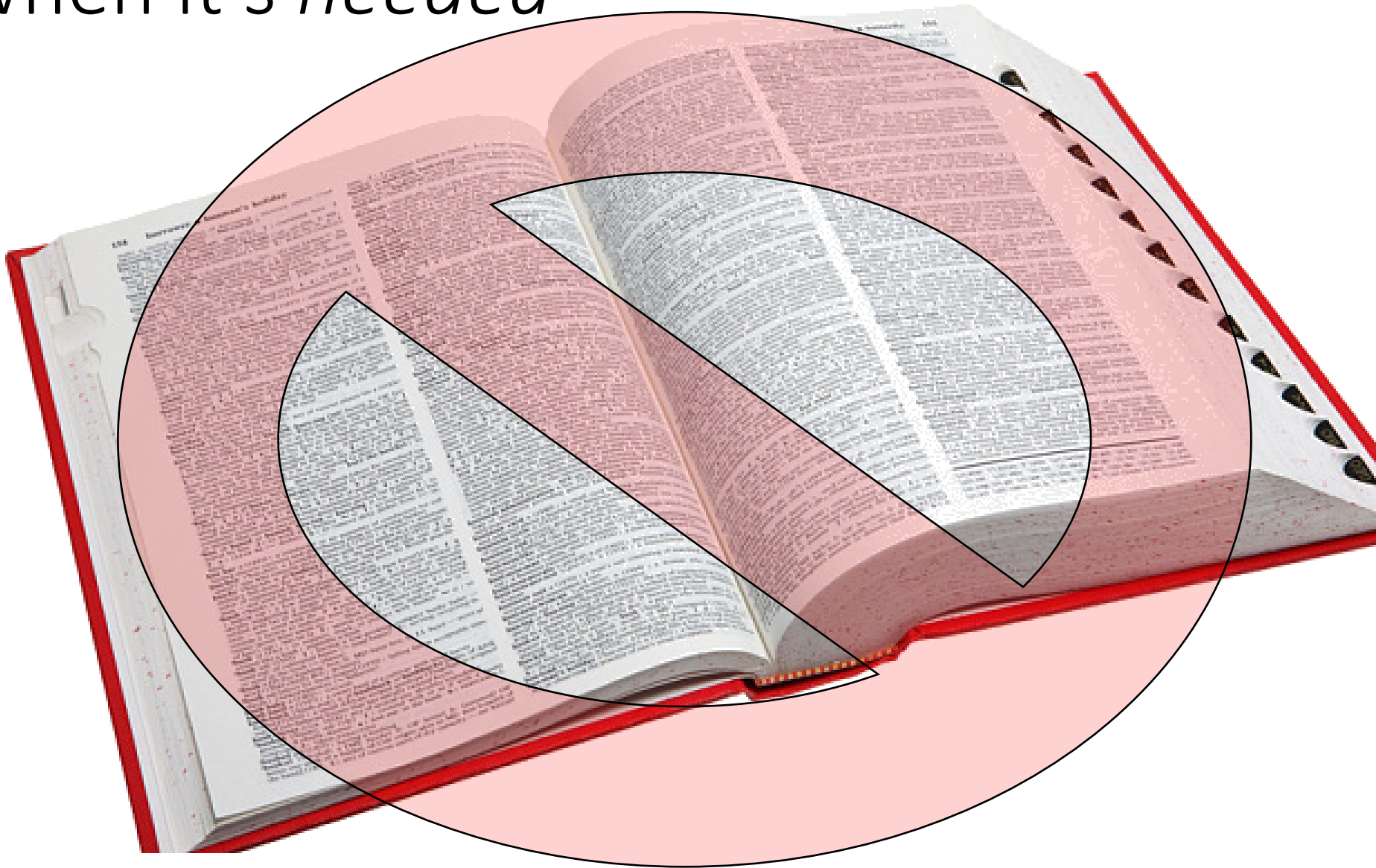
$$N = R^* f_p n_e f_i f_c L B_6$$

NUMBER OF LIFE-SUPPORTING PLANETS PER SOLAR SYSTEM

AMOUNT OF BULL YOU'RE WILLING TO BUY FROM FRANK DRAKE

*\*only absolutely essential equations should be shown*

Present relevant information (variables, references)  
when it's *needed*



# Finish On Time!



Source: <http://www.istockphoto.com>