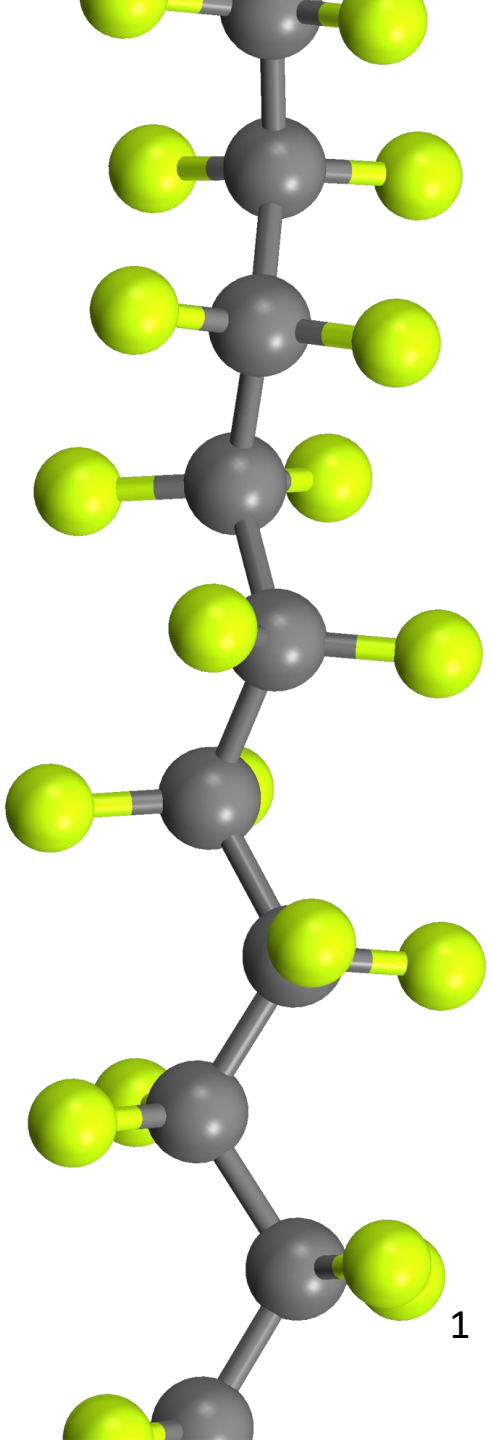
Welcome to Jeff's CHEM 4 lecture!
We'll be starting in just a bit…

- ✓ Today is the last day to add and the last day to drop without a serious & compelling reason.

- ✓ **Exam #1 is Wednesday, Sept 30.**
  - ✓ During normal class period. **Go to Canvas to take the exam.**
  - ✓ Timed: 50 minutes
  - ✓ 25 multiple choice questions; worth 4 pts each.
  - ✓ Both questions and answers will be randomized for each student.
  - ✓ Can use class handouts, textbook, lecture notes, PowerPoint slides.
  - ✓ Get all your materials (such as handouts, calculator and paper/pencil) ready before you start the exam.
  - ✓ Even though it is open book, you will not have enough time to look up every single thing, so you must study and be fully prepared going into the exam.



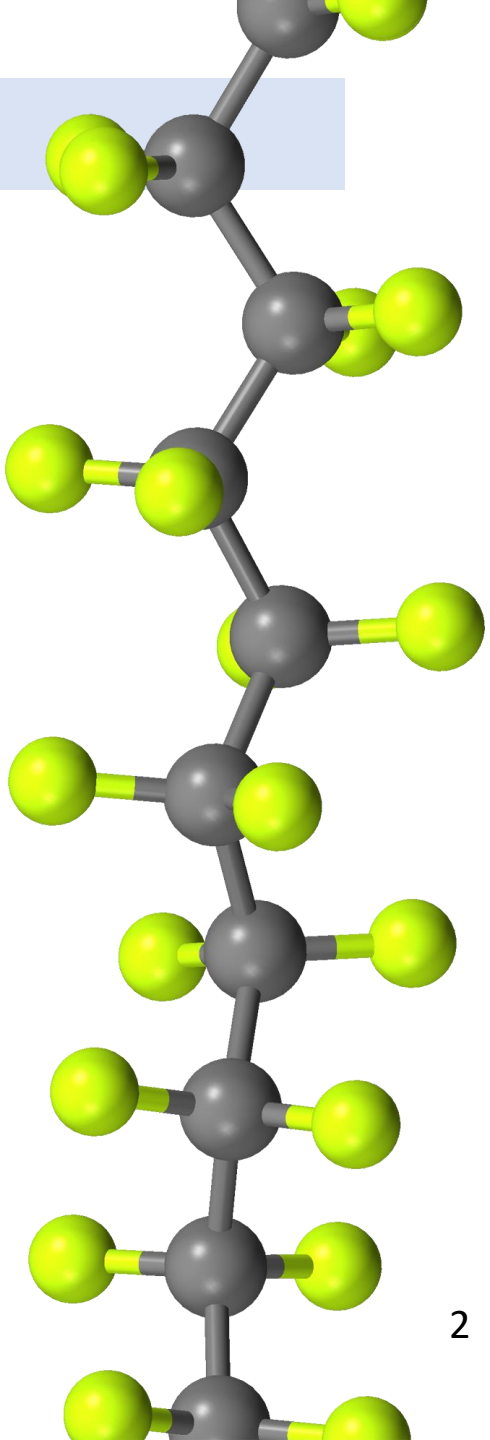
Are up keeping up with CHEM 4?

Resources:

- ✓ CHEM 4 Website: tinyurl.com/SacStateChem4
  - ✓ Learning Outcomes
  - ✓ PowerPoint slides and recordings of lecture
  - ✓ Finish up any late homework for credit
  - ✓ 4 practice quizzes with just naming
- ✓ Practice exams are posted on Canvas.
  - ✓ Time yourself; take it like a real exam.
  - ✓ Make a list of the type of questions you are getting wrong and focus your study on those topics. For extra practice on those topics, review: PowerPoint slides, e-text, homework problems, PAL worksheets.

Need help?

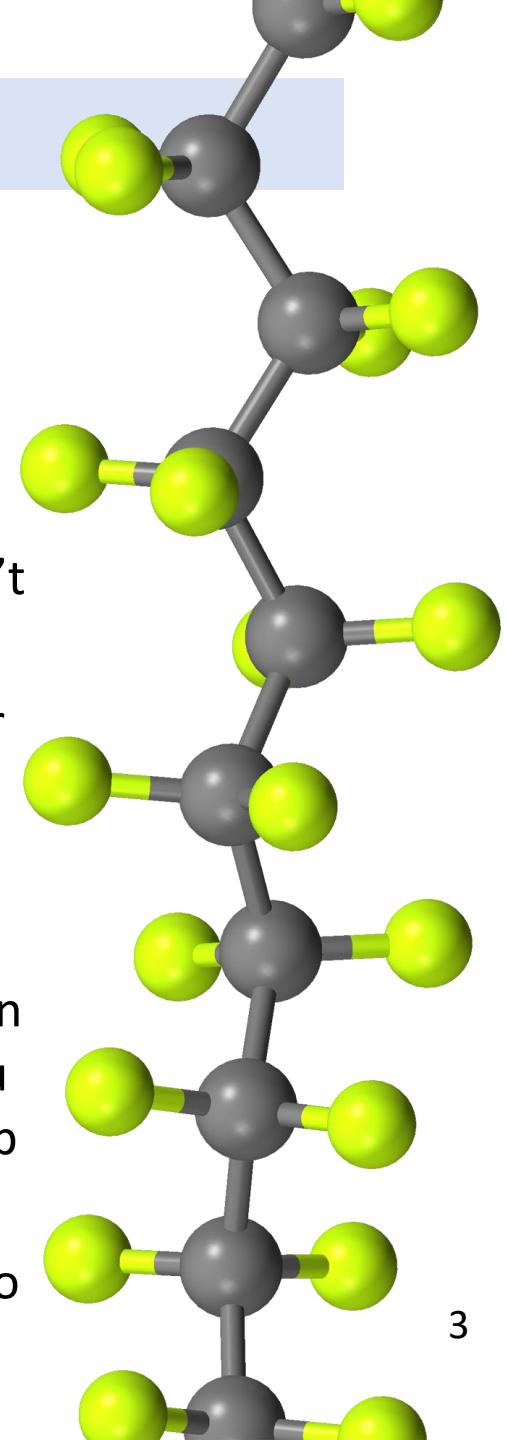
- ✓ Jeff's office hours today 9 – 9:30 am and 11 – 11:30 am.
- ✓ **NOTE: No office hours this Wednesday because of the exam.**
- ✓ PAL office hours: link is on our CHEM 4 website.
- ✓ PAL study hall: **M, 9/28 from 5-7pm** [Zoom Code: 913 4032 7145]
  T, 9/29 from 4-7pm [Zoom Code: 976 8070 7820]
- ✓ *Commit to Study* program: Allows you to drop lowest exam.



Are up keeping up with CHEM 4?

Academic dishonesty:

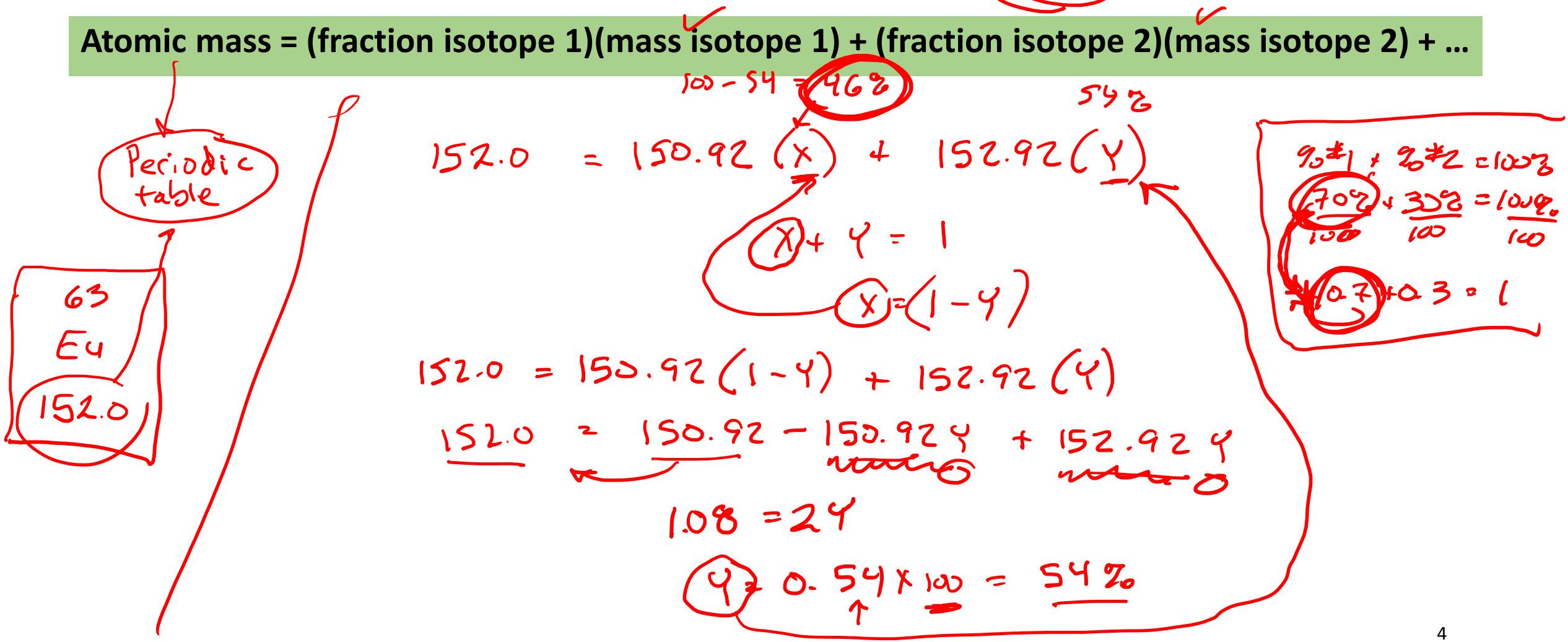
- ✓ Cannot use any online resources that are not explicitly associated with class.
- ✓ Students posting to Chegg or similar sites will be considered to be cheating.
- ✓ **Remember:** Everyone get's hurt by cheating.
  - ✓ Cheaters are stealing the hard work of others by taking a grade that they haven't earned.
  - ✓ Cheaters hurt themselves because they won't be prepared for our next exam or for CHEM 1A/1E, not to mention the MCAT, EIT, DAT, PCAT.
  - ✓ SacState's reputation is hurt when employers realize our grads don't know anything!
- ✓ **Bottom line:** There is no reason to cheat in this class. You are smart enough to earn a good grade. So, do your studying and be proud of the grade that you earn. If you end up earning a grade that you are not happy with, then do *Commit to Study*, drop the exam grade and make changes so you do better on the next exam.
- ✓ **My promise to you:** There will be no surprises and no trick questions. I just want to see if you have been learning the material that we've covered.



Questions?

Naturally occurring europium has 2 isotopes: Eu-151 with a mass of 150.92 amu and Eu-153 with a mass of 152.92 amu. What is the percent abundance of Eu-151?

Atomic mass = (fraction isotope 1)(mass isotope 1) + (fraction isotope 2)(mass isotope 2) + …



Questions?

Gallium has 2 naturally occurring isotopes. One of the isotopes, Ga-69 has a mass of 68.93 amu and a 60.1% abundance. What is the mass of the other isotope?

Atomic mass = (fraction isotope 1)(mass isotope 1) + (fraction isotope 2)(mass isotope 2) + …

P.T

69.72 = 68.93 (0.601) + (X)(0.399)

X = 70.91 amu

60.1% + X = 100%

X = 100% − 60.1%

X = 39.9%/100

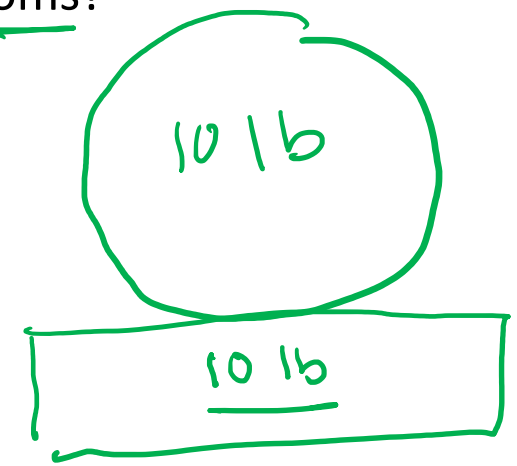
fract. 2 = 0.399

Questions?

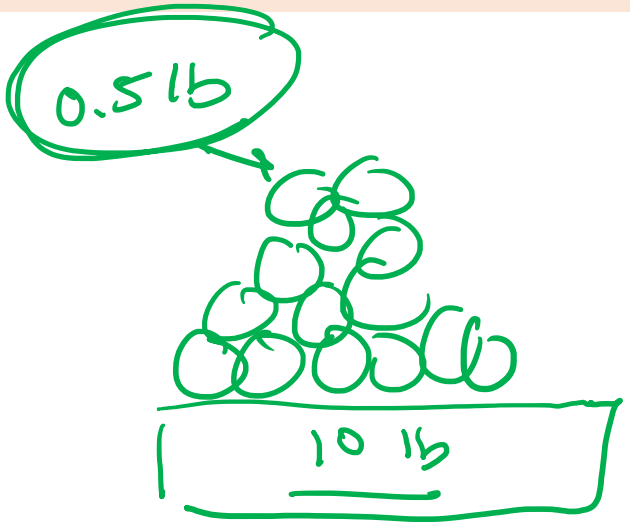
Which sample would have the most atoms?

A) 1 g of S-34
B) 1 g of S-32
C) 1g of Cl-37
D) 1 g of Cl-35

lightest atom, so need most of them to = 1g



bowling balls

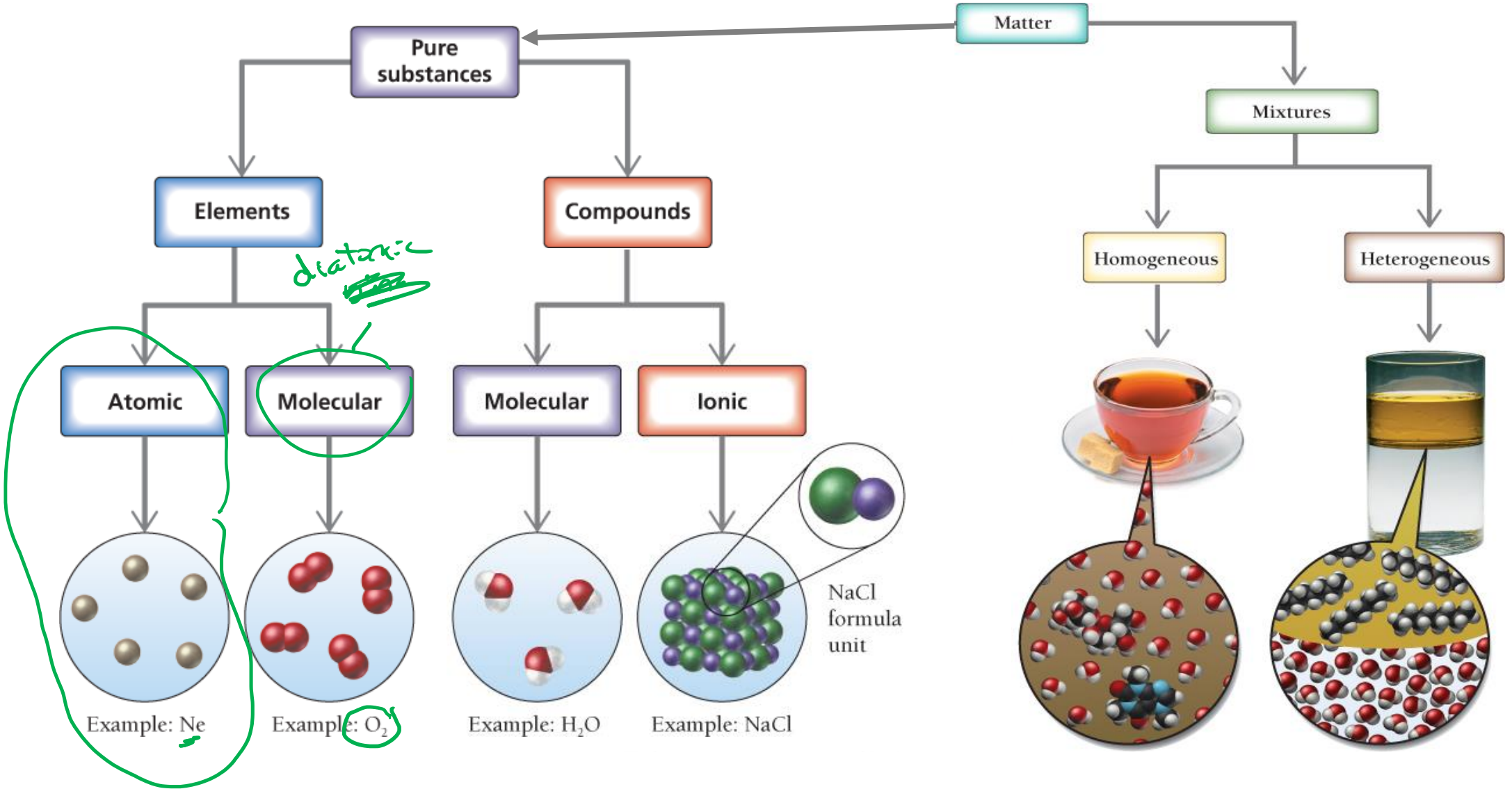


base balls

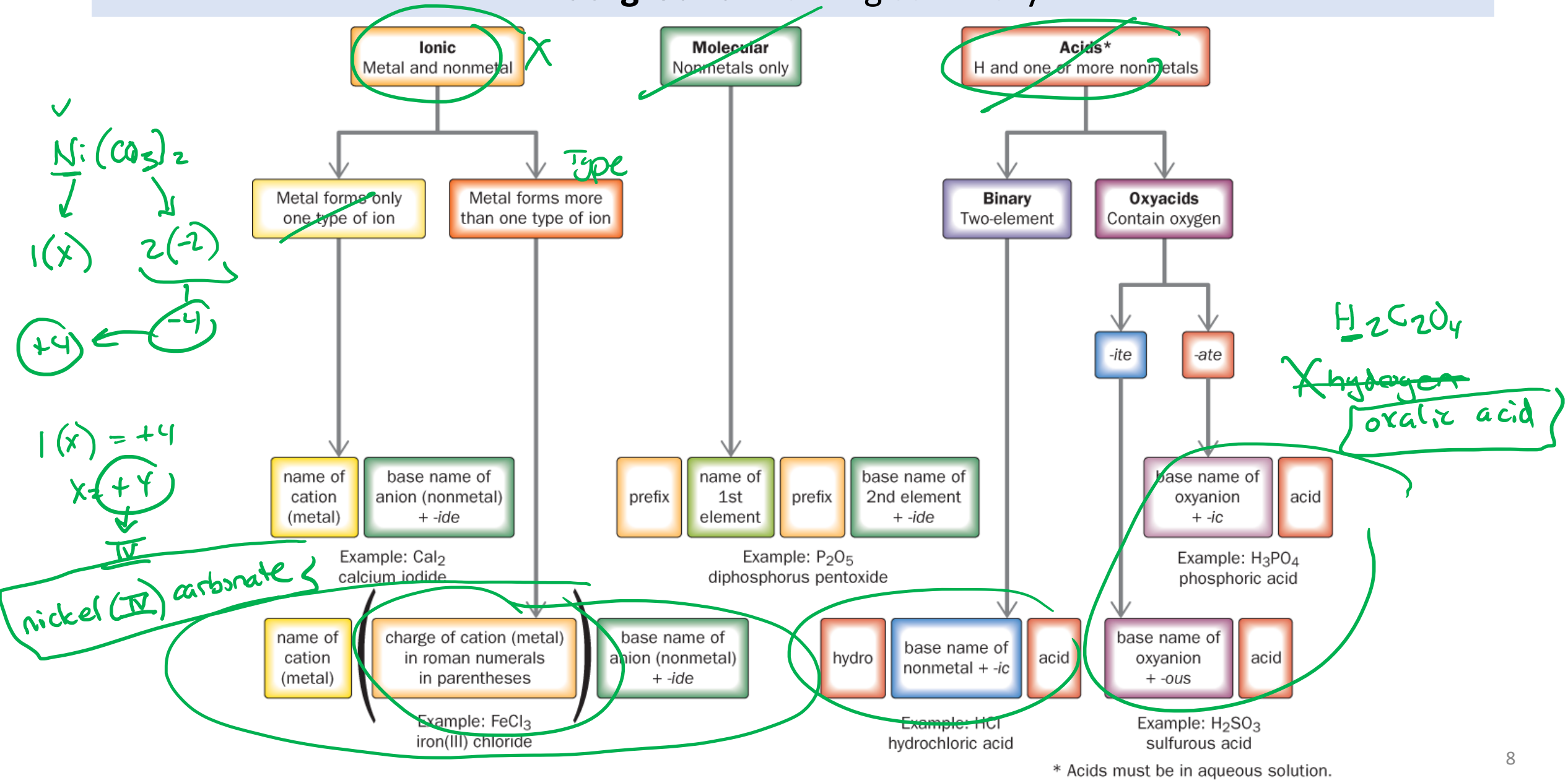
need more of lighter object to have 10 lbs

Background: Classifying matter

Elements and compounds can be further categorized…



Background: Naming summary



Questions?

O atoms in 4 units of magnesium nitrate

Mg^{+2} NO_3^{-}

$Mg(NO_3)_2$

4 x 6 O atoms = 24 O atoms

O atoms in 5 perchlorate ions

ClO_4^-

5 x 4 = 20 O atoms

Questions?

$Zn_3(PO_4)_2$

formula for zinc / cyanide

Zn^{+2} CN^{-}

1:2

$Zn(CN)_2$

formula for ammonium / oxalate

NH_4^{+} $C_2O_4^{2-}$

2:1

$(NH_4)_2C_2O_4$

Questions?