5min
A little about me:

- Born in Israel, can speak Hebrew.
- Was a research scientist for a number of years, did a bunch of chemistry. Worked with mass spectrometers alot.

5min
A refresher on atoms:

- Electrons, orbiting around a nucleus.
- Most of the mass is in the nucleus.
- The nucleus is made of protons and neutrons. The total number of protons and neutrons in the nucleus of an atom is called the **“Mass Number”**.
- Different elements are identified by the number of protons. This is called the **“Atomic Number”**.
- Two atoms with the same number of protons (atomic number) and different number of neutrons (so different mass number), are called **“Isotopes”.**
- Isotopes naturally occur in various relative abundances.

10-20min
The atomic weight, or relative weight, of an element can be calculated as a weighted average.

- Go through an example, show two different methods for the calculations (using percentages or converting to proportions).
- Ask the students what they think the atomic weight would be for chlorine (75% chlorine-35, 25% chlorine-37) and bromine (50% bromine-79, 50% bromine-81).
- Get the students to do a non-trivial example.

Examples of natural relative abundances of elements:

- Lithium (Li): lithium-6 (7.59%), lithium-7 (92.41%)
- Boron (B): boron-10 (19.9%), boron-11 (80.1%)
- Carbon (C): carbon-12 (98.93%), carbon-13 (1.07%)
- Magnesium (Mg): magnesium-24 (78.99%), magnesium-25 (10%), magnesium-26 (11.01%)
- Chlorine (Cl): chlorine-35 (75.76%), chlorine-37 (24.24%)
- Bromine (Br): bromine-79 (50.69%), bromine-81 (49.31%)

From NIST (https://physics.nist.gov/cgi-bin/Compositions/stand_alone.pl?ele=&all=all&ascii=html&isotype=some)