Unit 5 NAME

Class Work 12/13/13

5.3 Ionic Bonding - Naming

SPARK (Take out your 5.2 WS)

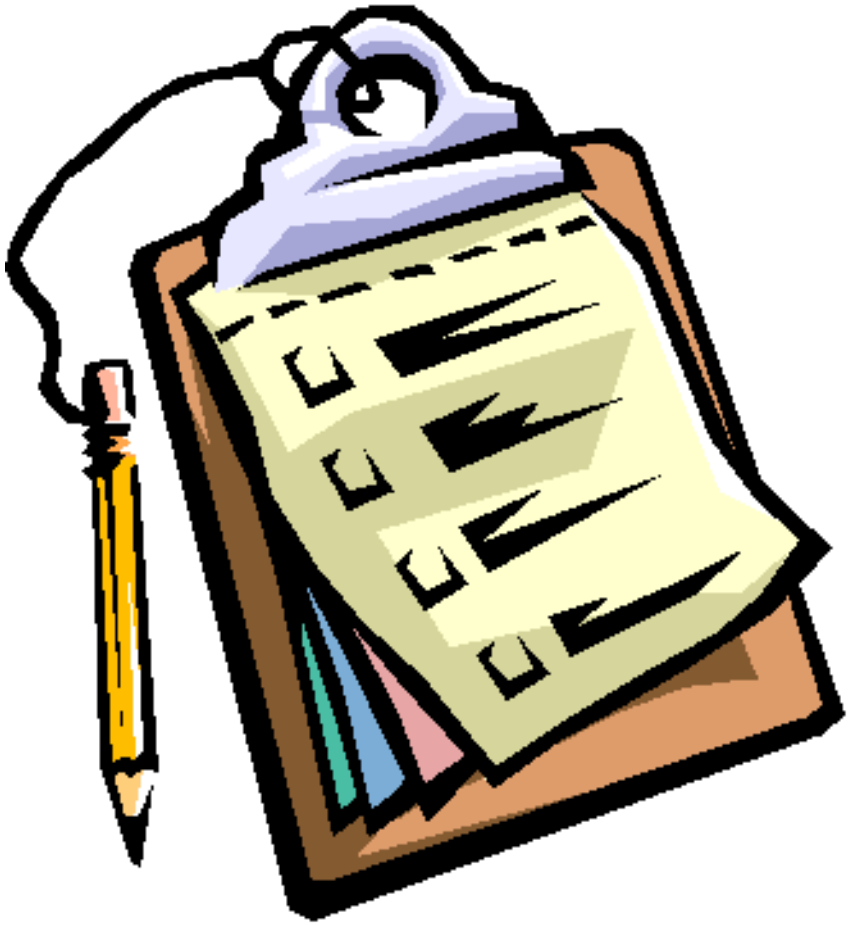
1. Write the formula for the following compounds:
   a. Calcium iodide
   b. Potassium nitride
   c. Barium and phosphorous
   d. Gallium and chloride

Objective

SWBAT name binary ionic compounds.

Agenda:

- SPARK/Objective
- Review – chemical formulas
- Lesson
- Practice
- Exit Ticket
- Homework



Objective: SWBAT explain trends in electronegativity

BINARY COMPOUNDS

- A binary compound is a compound that contains only two different elements.
  - Which formula represents a binary compound?

1) Ne
2) Br_2
3) C_3H_8
4) H_2SO_4

Oxidation Numbers

- Shown on your periodic table of elements
- The charge on a monatomic (single) ion is also called its oxidation state/number
  - Tells you what ions the element tends to form

Check for understanding

- What is the oxidation number for Calcium?

Transition Metals

- Transition metals have more than one oxidation state, so the name needs to identify which oxidation state is being referred to.

The Stock System of Nomenclature

Copper(II)Chloride

Name of cation

copper(II)

+

Roman numeral indicating charge

Name of anion

chloride

Used for ionic compounds where **the cation has more than one common oxidation state** (think transition metals!)

Transition Metals

- The name of the transition metal ion will tell you its charge or oxidation number.
  - Copper (I) will have a +1 charge or oxidation number
  - Copper (II) will have a +2 charge or oxidation number

- What is the formula for Iron (II) Bromide?

- What is the correct formula for chromium (III) oxide?

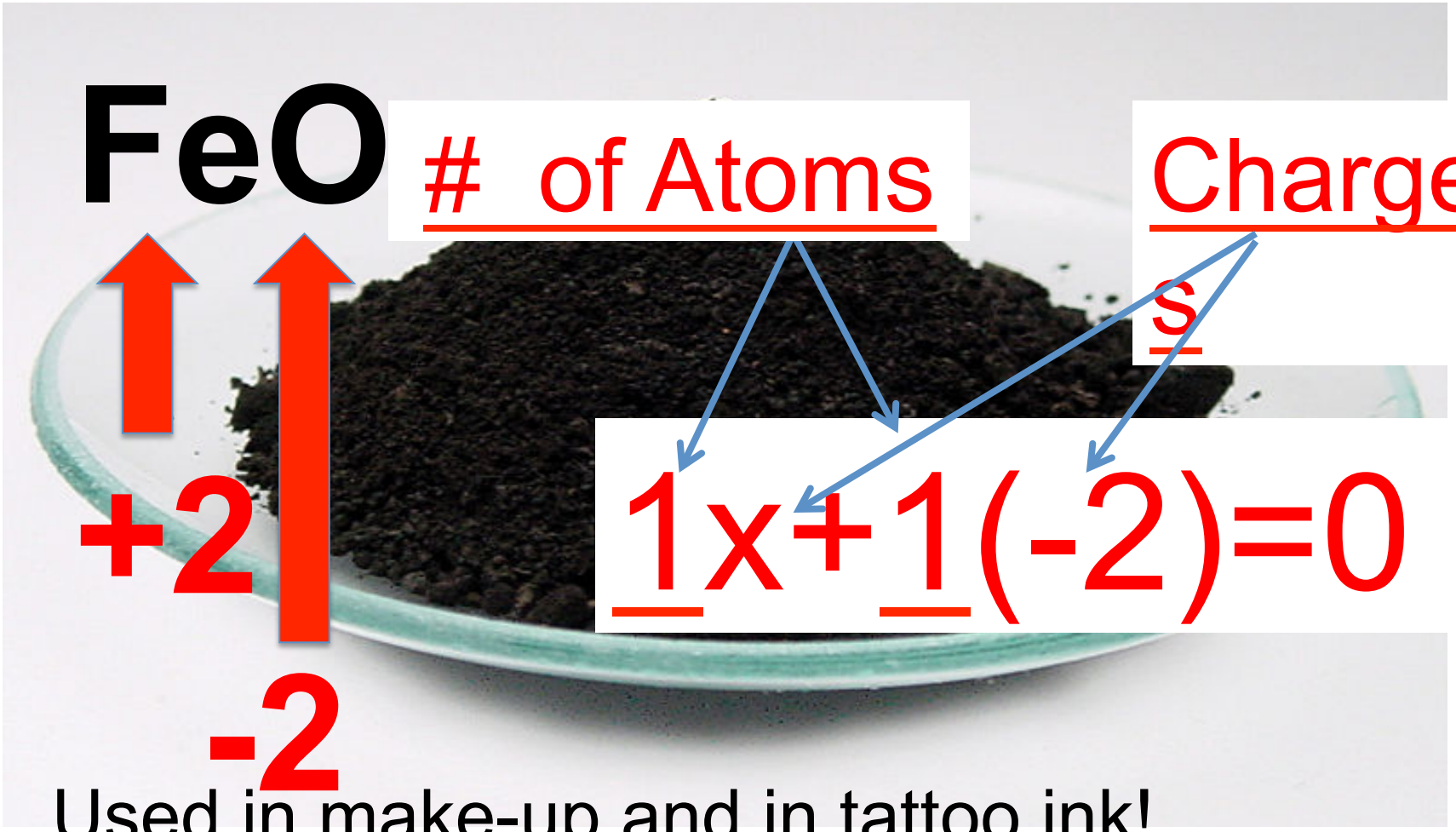
1. CrO_3
2. Cr_3O
3. Cr_2O_3
4. Cr_3O_2

- Write the formula for Lead (IV) Oxide?

How do we find the oxidation number if we have the chemical formula???

- You can find the oxidation number or charge on the cation by realizing that the overall compound must be neutral (EQUAL ZERO)!

Iron (II) Oxide



FeO

# of Atoms

Charges

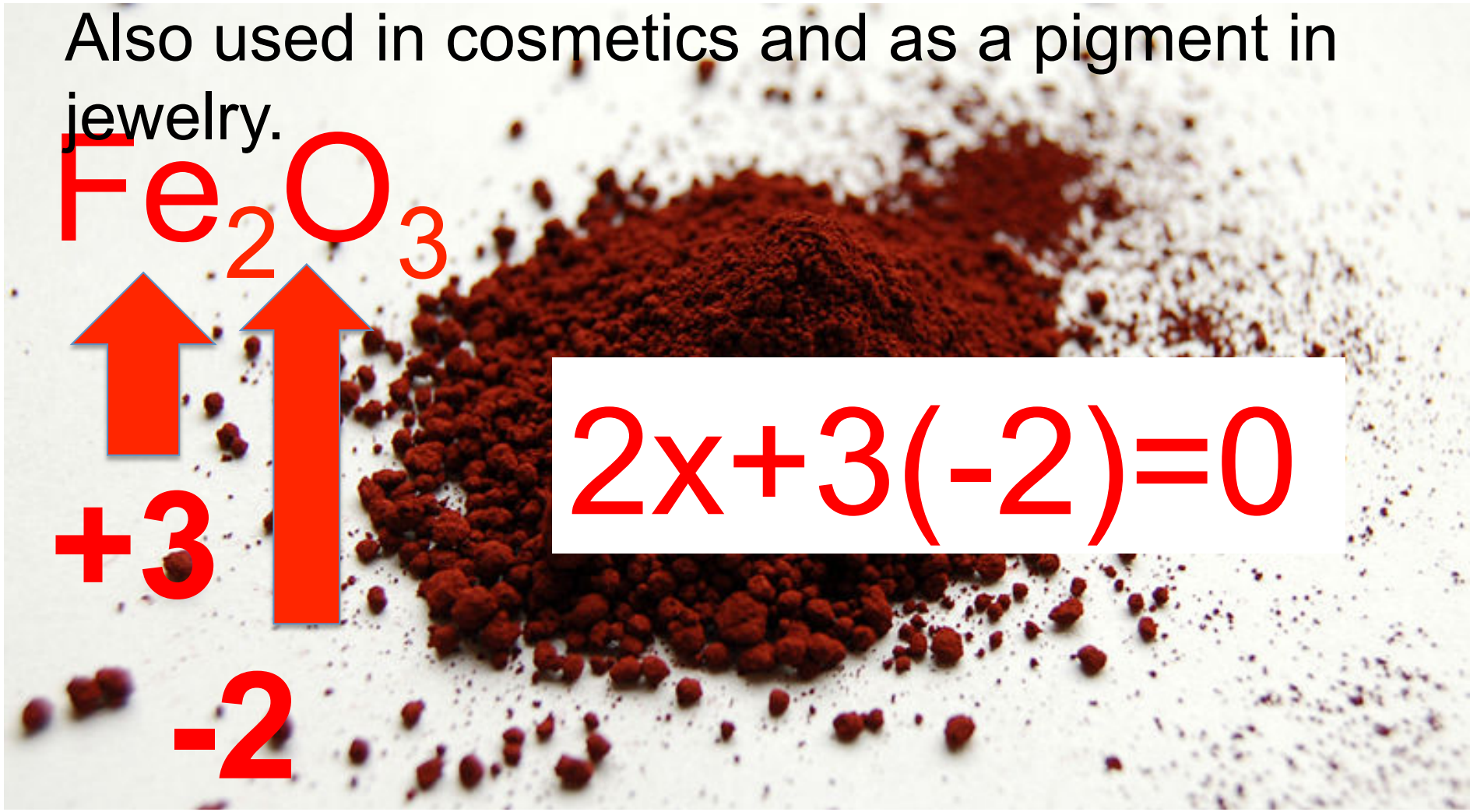
+2 -2

1x+1(-2)=0

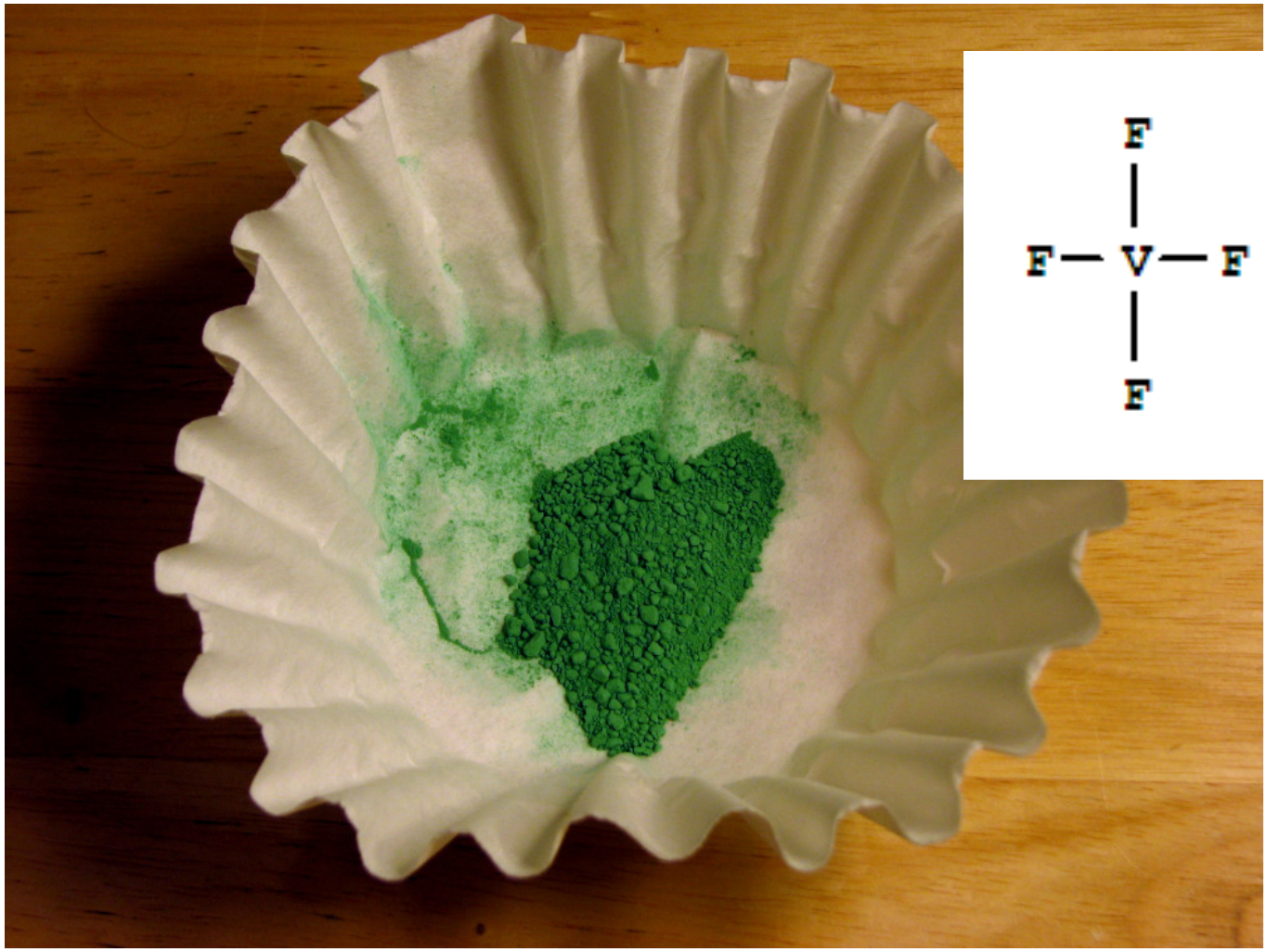
Used in make-up and in tattoo ink!

Iron (III) Oxide

Used to make iron, steel and many alloys. Also used in cosmetics and as a pigment in jewelry.



- What is the oxidation number for VF_4 ?



Practice with your neighbors!!!! Complete Chart

Name	Formula
Aluminum Oxide	
Iron (III) Chloride	
Sodium Iodide	
	CuO
	BeS
	$MnBr_3$

Answers!

Name	Formula
Aluminum Oxide	Al_2O_3
Iron (III) Chloride	$FeCl_3$
Sodium Iodide	NaI
Copper (II) Oxide	FeO
Beryllium Sulfide	BeS
Manganese (III) Bromide	$MnBr_3$

5.3 Independent Work!

- Practice problems on your own.

Exit Ticket

- What is the name for TiO2?
- What is the formula for Nickel (II) Iodide?

HOMEWORK

Finish 5.3 independent practice sheet!

Objective: SWBAT demonstrate mastery of Unit 4 topics!