

Follow along as you view the video, "Stoichiometry & Mole Ratios" on [edpuzzle.com](http://edpuzzle.com) (sign in with your Google School account) and fill in the blanks as you go. (Also available at <http://youtu.be/fd2ZQmKevS8>)

• **Stoichiometry:** \_\_\_\_\_

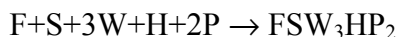
○ Calculations will always begin with \_\_\_\_\_ in a chemical equation and ask you to determine \_\_\_\_\_ in the same reaction.

○ e.g., in the reaction, \_\_\_\_\_, we could determine:

- The amount of \_\_\_\_\_
- The amount of \_\_\_\_\_
- The amount of \_\_\_\_\_
- etc.

• Use familiar example: Making a tricycle

○ 1 frame, 1 seat, 3 wheels, 1 handlebar, 2 pedals:



- Note: this does not indicate the arrangement of the parts.

○ How many pedals are needed for 100 tricycles? \_\_\_\_\_

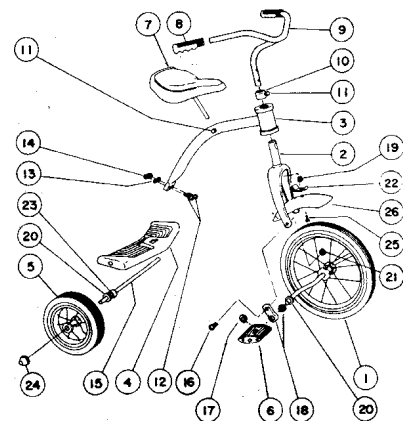
- How did you know?

○ How many wheels are needed for 200 pedals? \_\_\_\_\_

- How did you know?

○ Ratios: number of one item to number of another item, like \_\_\_\_\_

- E.g. \_\_\_\_\_ — Indicate:



- Mole ratios in chemical equations

- Coefficients in \_\_\_\_\_ have different meanings:

$\text{N}_2(\text{g})$	+	$3 \text{H}_2(\text{g})$		$2 \text{NH}_3(\text{g})$

- We will focus on the mole ratios: 1 mole  $\text{N}_2$  : 3 moles  $\text{H}_2$  : 2 moles  $\text{NH}_3$  give 6 ratios:

- \_\_\_\_\_ for each combination and \_\_\_\_\_
- will use the ratio to connect \_\_\_\_\_ to \_\_\_\_\_ (next lesson)

- Find the mole ratios for the following reactions:

- $4 \text{Al}(\text{s}) + 3 \text{O}_2(\text{g}) \rightarrow 2 \text{Al}_2\text{O}_3(\text{s})$
- $3 \text{Fe}(\text{s}) + 4 \text{H}_2\text{O}(\text{l}) \rightarrow \text{Fe}_3\text{O}_4(\text{s}) + 4\text{H}_2(\text{g})$

- Read Section 12.1, pp. 352-357 in textbook.