Q: What is relative atomic mass?	Q: What is relative formula mass?
Q: What is an empirical formula?	Q: How do you calculate an empirical formula?
Q: Burning 10.00 g of magnesium produces 16.40 g of oxide. What is the empirical formula of magnesium oxide?	Q: What is percentage composition?
Q: The mass of oxygen in water is 16. The total mass of water is 18. What is the percentage composition of oxygen in water?	Q: What is the yield of a reaction?

A: The sum of all of the relative atomic masses for all the atoms in a molecule.	A: The average atomic mass of an element taking into account the relative abundance of the isotopes of that element.
A: Step 1 – find the mass of each element in a compound; Step 2 – divide the mass of each element by its atomic number; Step 3 – divide your answers by the lowest answer (this gives you a ratio); Step 4 – relative number of atoms (rounded).	A: A formula that shows the correct ratio of all the elements in a compound.
A: The proportion of a compound's relative formula mass composed of a specific element.	A: MgO.
A: The mass of product obtained in the reaction.	A: 88.89% oxygen.

Q: What is the theoretical yield of a reaction?	Q: Why is the actual yield of a reaction usually less than the theoretical yield?
Q: What is the percentage yield?	Q: How do you calculate the percentage yield?
Q: What is stoichiometry?	Q: What are the economic problems associated with waste products?
Q: What are the environmental problems associated with waste products?	Q: What are the social problems associated with waste products?

A: Incomplete reactions, practical losses during preparation, competing unwanted reactions.

A: The predicted yield based on a chemical equation.

A: Percentage yield = (actual yield / theoretical yield) x 100.

A: The ratio of actual yield to theoretical yield.

A: Waste products are not commercially useful. They must be disposed of efficiently and cheaply. Any money spent on disposal has to be deducted from the profit created by the commercial product.

A: A branch of chemistry dealing with calculations based on chemical equations.

A: Disposal must be socially responsible. Improperly disposed of chemical waste can cause health-related problems. This can place an unnecessary strain on medical services. For example, waste chemicals leaking into the water supply or leeching into soil can affect not only people's health, but cause disruption to farm animals and food crops.

A: The environment should be damaged as little as possible. This may mean converting the waste products in another reaction to make them less harmful. Or, as in the case of SO_2, produced by burning hydrocarbons to produce electricity, converting them to useful compounds that can be sold.

Q: What are the three main goals of an industrial chemist when trying to find the most economically suitable reaction?	**Q: How do industrial chemists try to maximise yield?**
Q: How do industrial chemists attempt to ensure as many of the products of a reaction are as commercially useful as possible?	**Q: Why is it important for industrial chemists to ensure a suitable speed for a reaction?**
Q: Calculate the percentage by mass of nitrogen in sodium nitrate.	Q: What is the empirical formula of the compound formed when 227 g of calcium reacts with 216 g of fluorine?
Q: What mass of magnesium oxide is produced when 112.1 g of magnesium burns in air?	**Q: What mass of sodium is needed to produce 108.2 g of sodium oxide?**

A: Chemists examine every step of the process. This will begin with the way reactants are handled before the reaction. Then attention will turn to reaction conditions. Chemists will want to ensure that as much of the reactants as possible reacts. This can include such things as the type of reaction vessel, mixing reactants and proper reacting conditions, including temperature.

A: A high percentage yield; a reaction where as many of the products are commercially useful as possible; a reaction that happens at a suitable speed.

A: The speed of a reaction can be crucial. If the reaction goes too slowly, secondary unwanted reactions may occur, decreasing the percentage yield and producing more unwanted products. A good example is when producing food products: items can spoil or go stale if produced too slowly. The opposite extreme is an explosive reaction that may kill or injure workers and damage equipment.

A: Almost from the beginning, chemists will look at the other products that are produced during the reaction. They will look for reactants that produce multiple commercial products or products that can easily be converted to useful products. The idea is to minimise waste at every step. For example, in a blast furnace for extracting iron, a major by-product is calcium silicate. Fortunately this can be made into breeze blocks that are used in the construction of houses.

A: CaF_2.

A: 16.5%.

A: 80.3 g.

A: 186.8 g.