What is a primary standard

- A primary standard must be available in a highly pure state
- It must be stable in air
- It must dissolve easily in water
- Example= Sodium Carbonate(Na_2C0_3)
- A standard solution is one in which the exact concentration is known.

Making a standard solution of Sodium carbonate

1. We weigh out 2.6g of standard sodium carbonate, Na_2C0_3.
2. Dissolve it in 100 cm^3 of deionised water in a beaker.
3. Wash all traces of the carbonate into the beaker using a wash bottle.
4. Stir the mixture until fully dissolved.
5. • Using a funnel, transfer the solution to a 250cm^3 volumetric flask.
6. Make up to within 1 cm of the mark with deionised water.
7. Add the rest of the water using a dropper Read from the bottom of the meniscus.
8. Invert 20 times to ensure an even/uniform solution.

Procedure for using the burette

- Rinse the burette with deionised water
- Clamp it vertically in the retort stand.
- Using the funnel, add a little of the hydrochloric acid solution to the burette and rinse the burette with this solution and discard it.
- Fill the burette with hydrochloric acid solution above the zero mark.
- Remove the funnel.
- Using the tap at the base of the burette, allow the acid to flow into a beaker until the level of liquid is at the zero mark. Ensure that there are no air bubbles in the nozzle of the burette.

Procedure for using the pipette

- Wash pipette out with deionised water
- Wash the pipette out with a vol of the solution is going to contain
- Use a pipette filler to fill the pipette to the calibration mark
- When transferring to the conical flask, tip the side of the flask to let exact vol into flask

Conical flask

- Clean with deionised water.
- DO NOT rinse with solution it is going to contain
- Place on top of a white tile to see colour change clearly.
- Constantly swirl the flask while carrying out the titration.
- Rinse down sides of flask with deionised water when carrying out the titration.

To determine the % of water of crysallisation in hydrated sodium carbonate(HL only)

- We want to find out the mass of water in the washing soda crystals
- The standardised solution is HCl(we standardised this HCl in the previous titration)
- Indicator is methyl orange