Checklist for Titration

Checklist for Titration

1) Rinse the burette with distilled water?

Yes ☐   No ☐

2) Rinse the burette with the solution that it will be used to contain?

Yes ☐   No ☐

3) Ensure that the tap of the burette is closed before filling it with the required solution?

Yes ☐   No ☐

4) Over fill the burette with solution?

Yes ☐   No ☐

5) Rinse the pipette with distilled water?

Yes ☐   No ☐

Checklist for Titration

1) Rinse the burette with distilled water?
Yes ☑   No ☐

2) Rinse the burette with the solution that it will be used to contain?
Yes ☑   No ☐

3) Ensure that the tap of the burette is closed before filling it with the required solution?
Yes ☑   No ☐

4) Over fill the burette with solution?
Yes ☐   No ☑

5) Rinse the pipette with distilled water?
Yes ☑   No ☐

Checklist for Titration

6) Rinse the pipette with the solution that it will be filled with?

Yes ☐   No ☐

7) Insert the pipette carefully and gently into the pipette filler?

Yes ☐   No ☐

8) Suck excess solution into the pipette filler?

Yes ☐   No ☐

9) Remove the pipette from the solution while adjusting the meniscus onto the graduation?

Yes ☐   No ☐

10) Touch the tip of the pipette onto the surface of the solution before removing it from the flask?

Yes ☐   No ☐

Checklist for Titration

6) Rinse the pipette with the solution that it will be filled with?

Yes ☑   No ☐

7) Insert the pipette carefully and gently into the pipette filler?

Yes ☑   No ☐

8) Suck excess solution into the pipette filler?

Yes ☐   No ☑

9) Remove the pipette from the solution while adjusting the meniscus onto the graduation?

Yes ☑   No ☐

10) Touch the tip of the pipette onto the surface of the solution before removing it from the flask?

Yes ☑   No ☐

Checklist for Titration

11) Blow the solution out of the pipette using the pipette filler?

Yes ☐   No ☐

12) Before use, rinse the conical flask with distilled water?

Yes ☐   No ☐

13) Rinse the conical flask with the solution that will be pipetted into it?

Yes ☐   No ☐

14) Ensure that the burette is clamped vertically at all times, especially while taking readings?

Yes ☐   No ☐

15) Climb up on a stool to take burette readings?

Yes ☐   No ☐

Checklist for Titration

11) Blow the solution out of the pipette using the pipette filler?

Yes ☐   No ☑

- Let the solution drain out of the pipette under gravity.

12) Before use, rinse the conical flask with distilled water?

Yes ☑   No ☐

13) Rinse the conical flask with the solution that will be pipetted into it?

Yes ☐   No ☑

- Increases the amount of chemical in the flask, increasing the volume of solution from the burette.

14) Ensure that the burette is clamped vertically at all times, especially while taking readings?

Yes ☑   No ☐

- Do *not* remove the burette from the clamp to take readings – the burette *must* be *vertical*.

15) Climb up on a stool to take burette readings?

Yes ☐   No ☑

- This is dangerous! Lower the burette in its clamp so that you can take readings.

Checklist for Titration

16) Remove the funnel from the top of the burette before taking readings and starting the titration?

Yes ☐   No ☐

17) Ensure eye is level with the meniscus when taking readings?

Yes ☐   No ☐

18) Take burette reading going *up* the burette's scale?

Yes ☐   No ☐

19) Ignore air bubbles in the burette and pipette as they will not affect the results?

Yes ☐   No ☐

20) Ensure that a white tile is placed under the conical flask while performing the titration?

Yes ☐   No ☐

Checklist for Titration

16) Remove the funnel from the top of the burette before taking readings and starting the titration?

Yes ☑   No ☐

17) Ensure eye is level with the meniscus when taking readings?

Yes ☑   No ☐

18) Take burette reading going *up* the burette's scale?

Yes ☐   No ☑

• Read the burette moving *down* the scale, in the direction that the solution is moving.

19) Ignore air bubbles in the burette and pipette as they will not affect the results?

Yes ☐   No ☑

• Air bubbles must be removed. They occupy a volume that should be taken-up by the solution.

20) Ensure that a white tile is placed under the conical flask while performing the titration?

Yes ☑   No ☐

Checklist for Titration

21) Add 10 to 12 drops of indicator to the solution in the conical flask?

Yes ☐   No ☐

22) Ensure that the burette is filled to exactly 0.00 cm^3 before starting the actual titration?

Yes ☐   No ☐

23) Swirl the conical flask continuously during the titration?

Yes ☐   No ☐

24) Wash the inside of the conical flask with distilled water near to the end-point?

Yes ☐   No ☐

25) Ensure that the addition of just *one drop* of solution from the burette gives the desired colour?

Yes ☐   No ☐

Checklist for Titration

21) Add 10 to 12 drops of indicator to the solution in the conical flask?

Yes ☐   No ☑

• Only add 2 – 4 drops of indicator to the solution in the conical flask.

22) Ensure that the burette is filled to exactly 0.00 cm^3 before starting the actual titration?

Yes ☐   No ☑

• Ensure that the meniscus of the solution is on the scale towards the top of the burette.

23) Swirl the conical flask continuously during the titration?

Yes ☑   No ☐

24) Wash the inside of the conical flask with distilled water near to the end-point?

Yes ☑   No ☐

25) Ensure that the addition of just *one drop* of solution from the burette gives the desired colour?

Yes ☑   No ☐

Checklist for Titration

26) Wear safety glasses during the course of the practical?

Yes ☐   No ☐

27) Record all burette readings to two decimal places?

Yes ☐   No ☐

28) Repeat the titration until two results ±0.10 cm^3 are obtained?

Yes ☐   No ☐

29) Record the volume of the solution that is pipetted to one decimal place?

Yes ☐   No ☐

30) Tick the best *three* "volumes of solution used" to average for the calculation?

Yes ☐   No ☐

Checklist for Titration

26) Wear safety glasses during the course of the practical?

Yes ☑   No ☐

27) Record all burette readings to two decimal places?

Yes ☑   No ☐

28) Repeat the titration until two results ±0.10 cm^3 are obtained?

Yes ☑   No ☐

29) Record the volume of the solution that is pipetted to one decimal place?

Yes ☑   No ☐

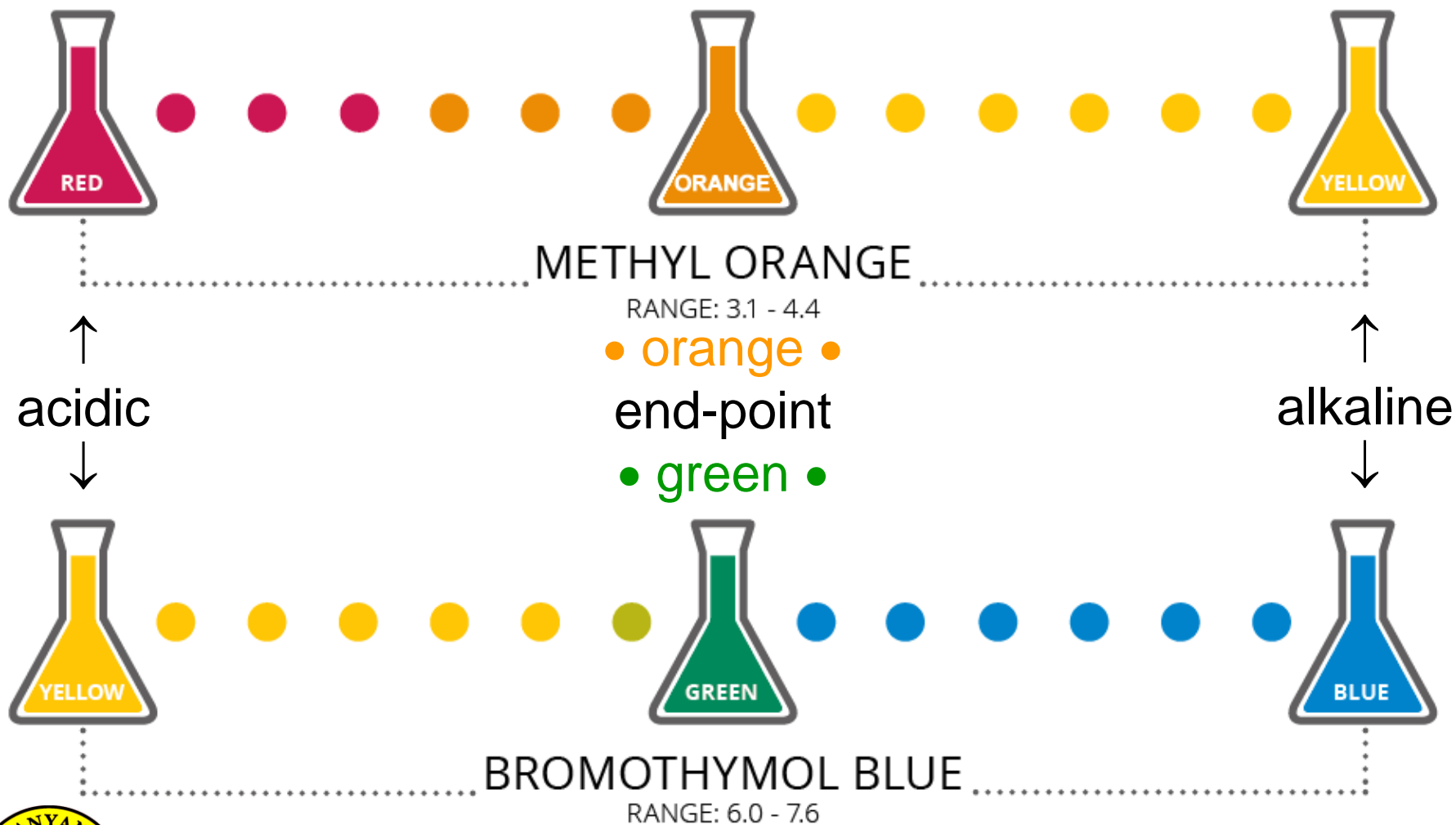**30)** Tick the best *three* "volumes of solution used" to average for the calculation?

Yes ☐   No ☑

• Only tick the best *two* "volumes of solution used" and average these for the calculation.
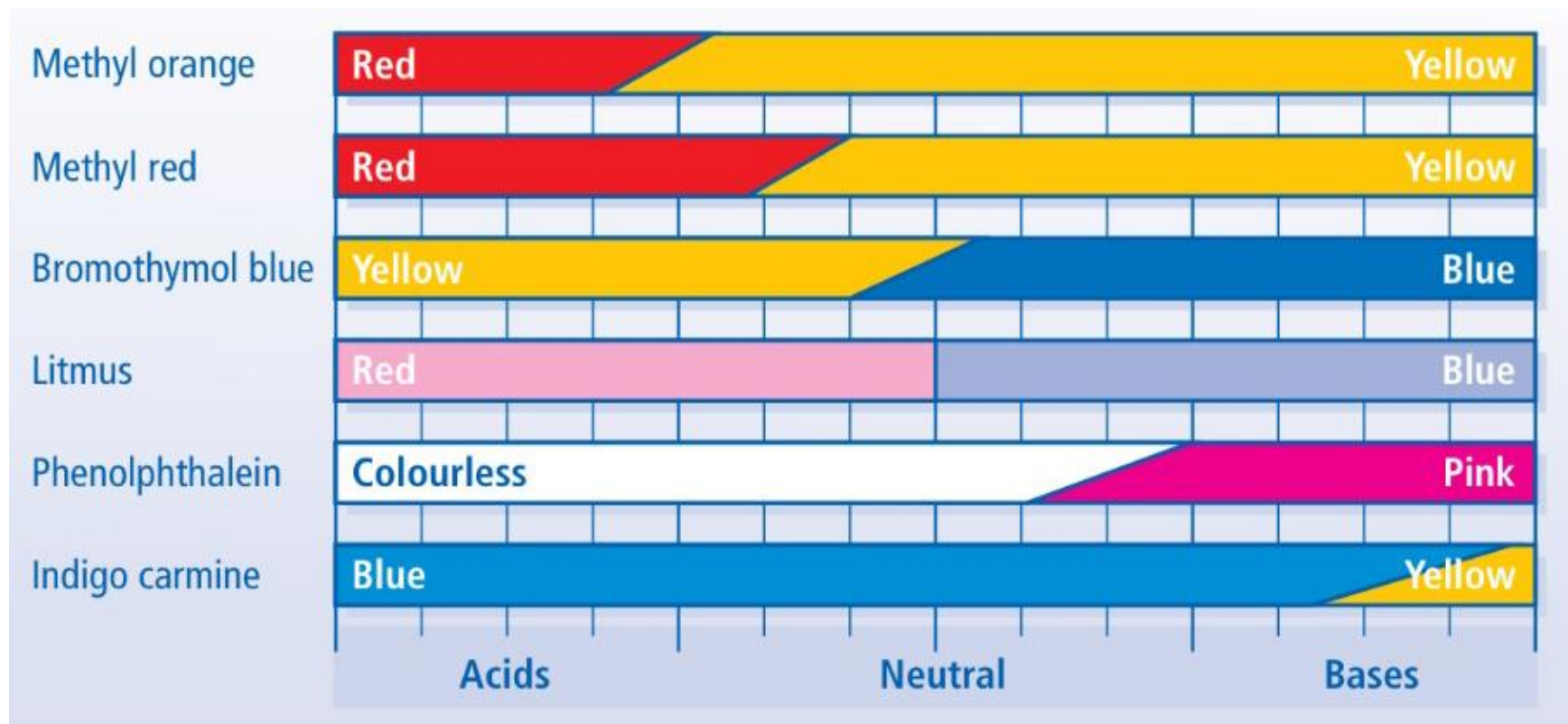
Checklist for Titration

METHYL ORANGE
RANGE: 3.1 - 4.4

● orange ●
end-point
● green ●

acidic

alkaline

BROMOTHYMOL BLUE
RANGE: 6.0 - 7.6

Checklist for Titration

Common Indicators

	Acids	Neutral	Bases
Methyl orange	Red	Yellow	
Methyl red	Red	Yellow	
Bromothymol blue	Yellow	Blue	
Litmus	Red	Blue	
Phenolphthalein	Colourless		Pink
Indigo carmine	Blue		Yellow

Checklist for Titration

Titration			
Rough	1st	2nd	3rd

	Rough	1st	2nd	3rd
*Final burette reading / cm³				
*Initial burette reading / cm³				
Volume of solution used / cm³				
✓ Two results ± 0.10 cm³				

*Note that it is burette *reading* and NOT burette *volume*.

Checklist for Titration

	Titration			
	Rough	1st	2nd	3rd
Final burette reading / cm^3	27.55	33.80	27.60	27.00
Initial burette reading / cm^3	1.30	8.70	2.25	1.80
Volume of solution used / cm^3	26.25	25.10	25.35	25.20
✓ Two results ± 0.10 cm^3		✔		✔

- Average of best <u>two</u> results
= (25.10 + 25.20) ÷ 2 = <u>25.15 cm^3</u>

- Volume of solution pipetted = <u>25.0 cm^3</u>

Checklist for Titration

number
of moles
in solution

conc.
in
mol / dm^3
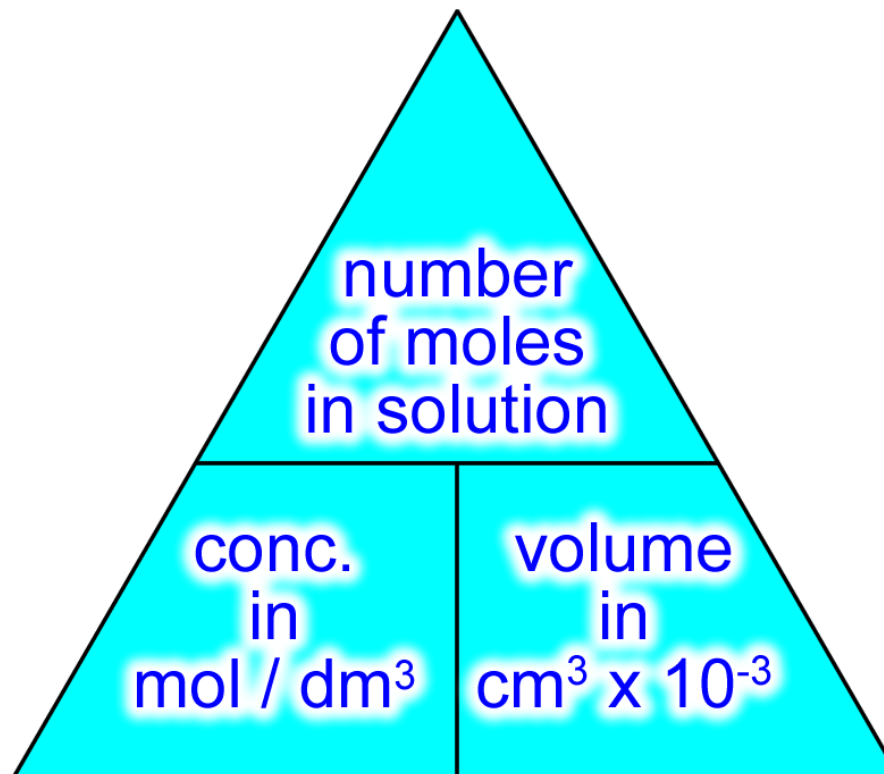
volume
in
cm^3 x 10^{-3}

Checklist for Titration

- Draw the table quickly and clearly.

  - Table can be drawn in *pencil*.

    - Please write in *pen*.

  - It is essential to include *units*.

  - Burette *reading*, not *volume*.

- *Volume* of solution, not *amount*.

  - Burette readings to *2 d.p.*

- *Include zeros*, *e.g.* 23.00 not 23.