

Please take out the following items:

1. Note (Homework arrangement, Pre-Lesson)
2. **Logbook** (Pink long exercise book) for making note
3. Textbook

1. Review the idea of Mixing different indicator
2. Testing the plants that you bring (6 minutes)
3. Discussion on what you will choose to mix (6 minutes)
4. Presentation from different group choices (15 minutes)
5. Trying to mix solution & perform experiment
6. Review your result and try drawing a conclusion
7. Showing a good mixing of different natural indicator
(Teacher demo)
8. Homework arrangement

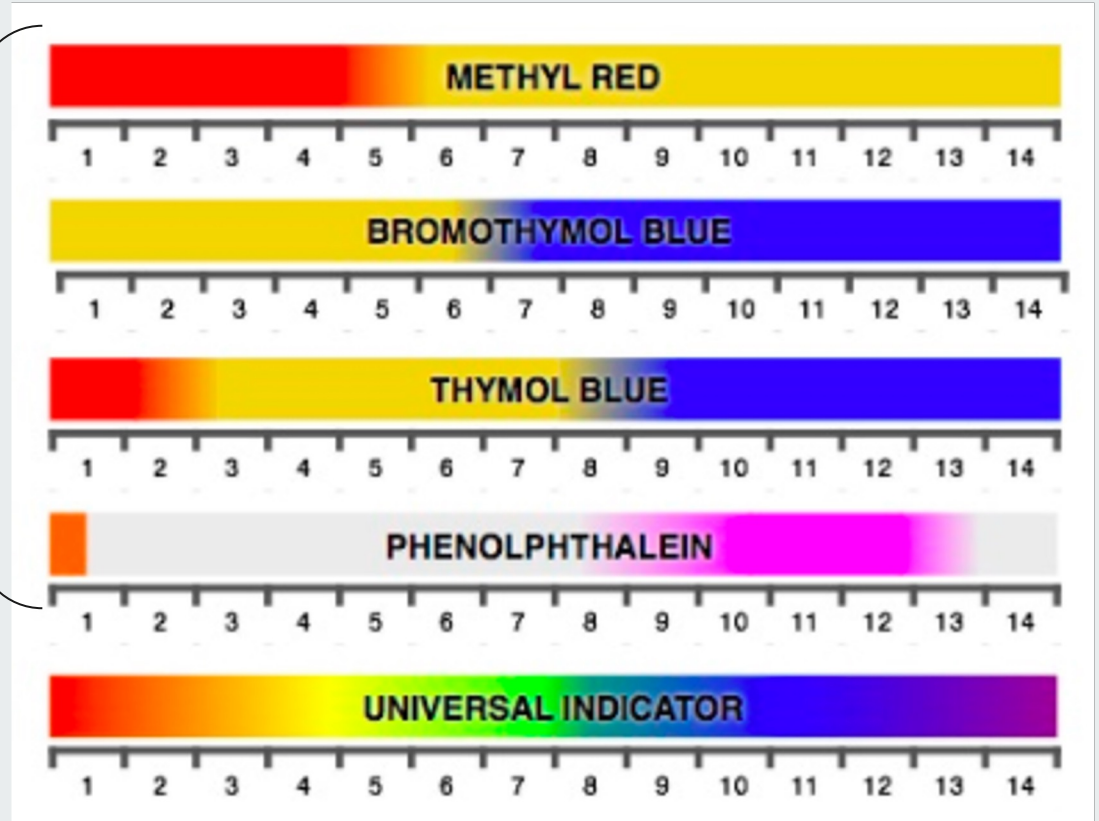
What is universal indicator actually?



What is universal indicator actually?



mixture of
different indicator



New challenge

- DIY universal indicator with different natural indicator

Red cabbage



Hibiscus



Why DIY universal indicator?

胃酸分泌不足的影響

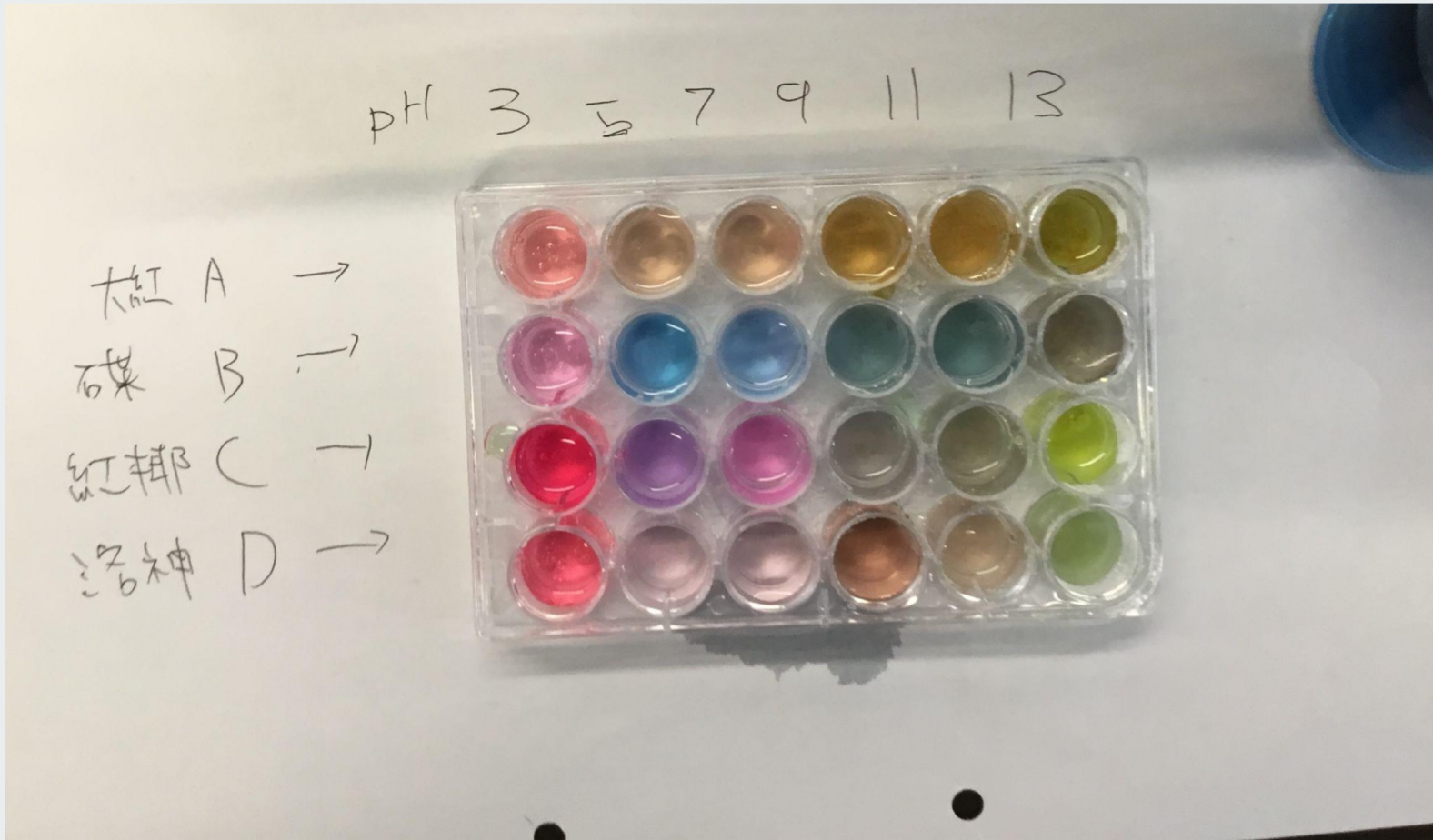
1. 影響消化不良
2. 容易得到胃炎
3. 影響維生素吸收
4. 影響鈣的吸收
5. 癌症的演變
6. 吃制酸劑的傷害



脹氣、胃酸過多...消化不良好煩
醫師告訴你為什麼胃常鬧脾氣

Test on food with natural indicator SAFELY

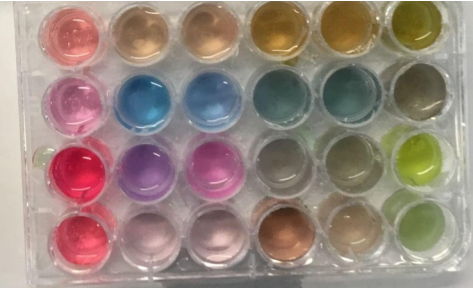
Testing YOUR plants on plate (6 minutes)



Discussion Time (6 minutes)

- What are the criteria (準則) you will think of in choosing the which 2 natural indicator and the indicator you brought for mixing.
Avoid (避免): _____
Prefer (傾向): _____
- What other issue you have to consider when mixing? (e.g. ratio of volume added? Concentration of the natural indicator?)

大紅 A →
石炭 B →
紅椰 C →
碧神 D →



Presentation from groups (15 minuts)



Trying your own mixing formula !!

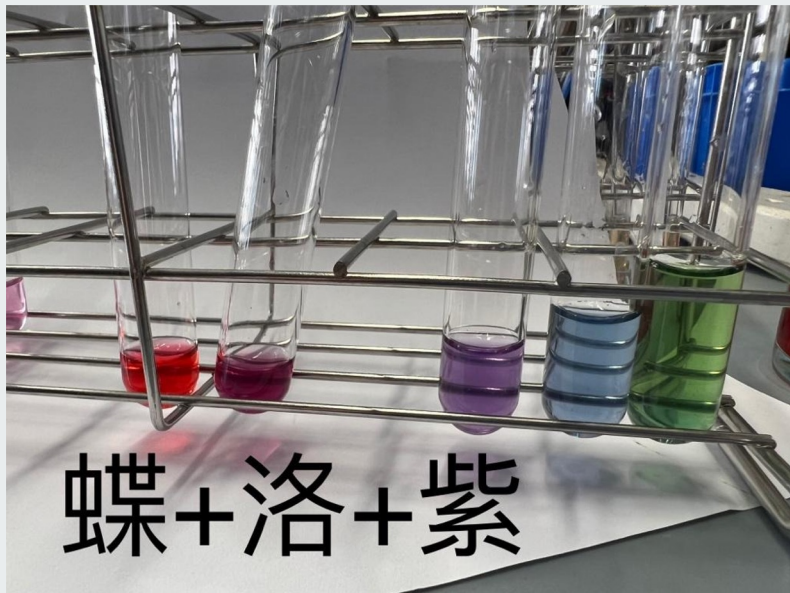
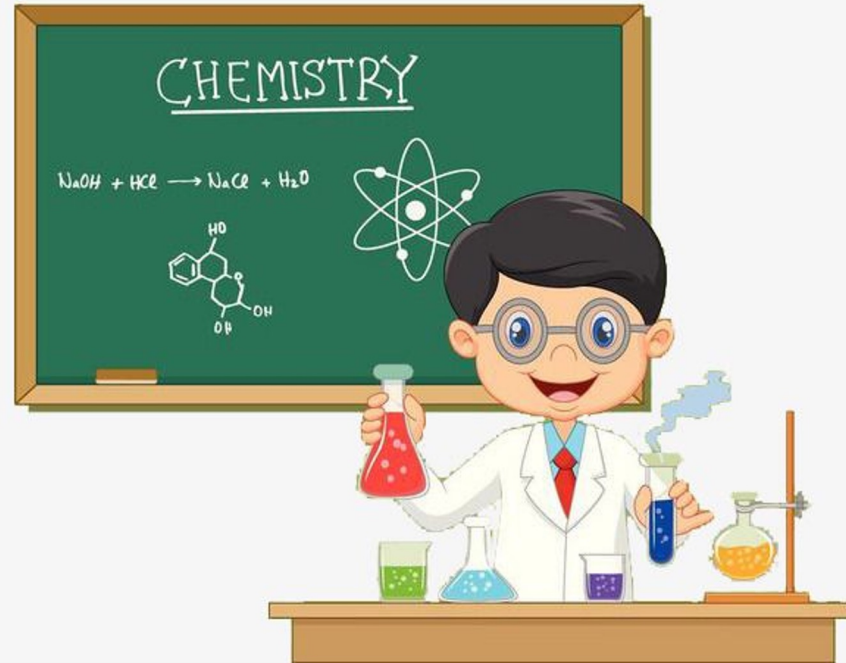


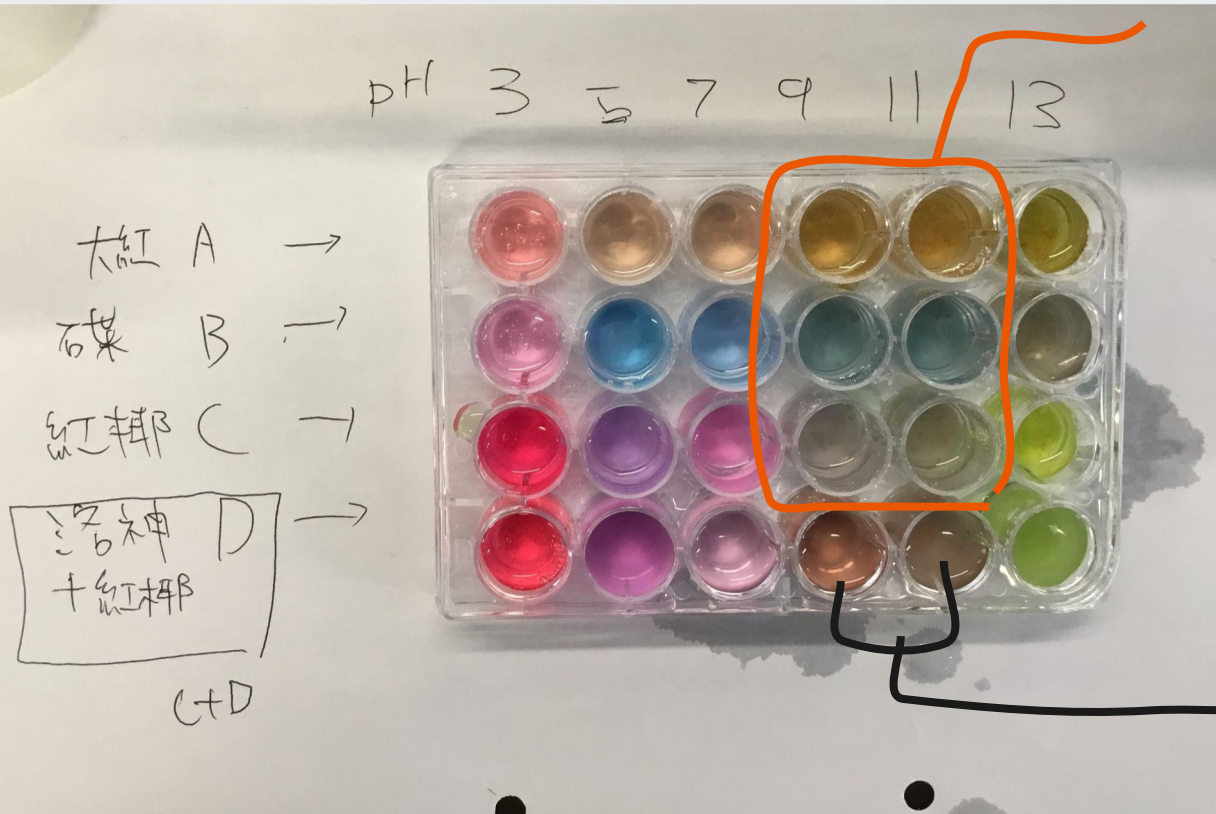
Plate 2

Teacher mixing formula



Teacher mixing formula

These 3 indicators alone show the same colour with pH 9 and pH 11



After Mixing we can tell the difference between pH 9,11 now!