**Observations:**

Calcium Chloride

Sodium Bicarbonate

Water

Phenol Red

**Discussion Questions:**

1. Were the changes you observed physical or chemical? Justify your answer.
2. Was there a temperature change during the reaction? How do you think it was generated?
3. Why did the bag expand? What must have been produced?
4. Can you see a commercial way in which this reaction could be used?
5. We used 4 different reactants (calcium chloride, sodium bicarbonate, phenol red and water) in this experiment. We want to determine which reactants caused which changes (in colour, temperature, state etc). Explain how you would design an experiment to do so.

Challenge:

Using the chemical equation below can you explain the colour change and the gas bubbles produced?

CaCl2 + 2NaHCO3 + H2O + phenol red (basic form) CaCO3 + 2NaCl + H2O+ CO2 + phenol red (acidic form)