“Bone: It’s Alive!” activity

The mineral that coats bone tissue is called Calcium Phosphate. Using the materials provided, you will be making Calcium Phosphate from two chemicals: Calcium Chloride and Sodium Phosphate.

\[ 3\text{CaCl}_2 + 2\text{Na}_3\text{PO}_4 \rightarrow \text{Ca}_3(\text{PO}_4)_2 + 6\text{NaCl} \]

Materials:
- Safety Gloves/Goggles
- 1 mL Plastic Transfer Pipettes (1 per student)
- 1.5 mL microcentrifuge/Eppendorf tubes (1 per student)
- 50 mL conical (1 per class or group – 50 mL = ~100 uses)
- 0.2 M Calcium Chloride (500 µL per student)
- 0.2 M Sodium Phosphate (~500 µL per student)
- Vortex or centrifuge (optional)

Preparation:
- Each student should have their own set of gloves, plastic transfer pipette, and microcentrifuge tube.
- Fill each microcentrifuge tube with 500 µL of 0.2 M Calcium Chloride
- Fill each conical with an amount of 0.2 M Sodium Phosphate. This amount will vary based on group size. Each student will use ~500 µL, so

Procedure:
1. Each student takes 1 centrifuge tube of Calcium Chloride and a plastic transfer pipette.
2. Open the tube
3. Using the plastic transfer pipette, add ~500 µL (about half of the pipette) of Sodium Phosphate from the stock conical to the centrifuge tube.
4. Close the tube.
5. Shake well and observe.

Discussion: