

Foldscope Lesson Plan: Crystals

Scope: This is best if students are able to prepare their own slides but the instructor can have some prepared ahead of time. Can be adapted for all ages.

Materials:

- Foldscope (assembled)
- disposable micro pipette
- glass slides and ring stickers or paper slide and tape or cover stickers
- saturated solution of each: Sugar ($C_{12}H_{22}O_{11}$), Salt (NaCl), Epsom salts [$MgSO_4 \cdot 7H_2O$], Alum [$Al_2(SO_4)_3 \cdot 12H_2O$]
- food coloring (optional) Hint: each of the four crystals can be dyed with food coloring to match the colors below

Instructions:

- Have students make a slide for each of their samples (drop of saturated solution colored with a little food coloring)
 - using a ring sticker (peel cover off and set aside)
 - wait for this solution to recrystallize (then cover with the ring sticker cover)
- Have them label their slides
- Use foldscope to view their samples
- Have students draw what they see:



Example Vocabulary Words: Crystal & Crystalline; Dissolve; Solution; Dissolution; Saturated Solution; Supersaturated Solution; Hydrate

*Follow up lessons:

- look at prepared slides of crystals and have students identify an unknown crystal.