

Fraction Frame Assembly

Match the patterns on printed templates.

Difficulty increases from Level 1 to Level 3.

Materials

- 1 storage box
- 2 Fraction Frames
(Note: Each layer of a Frame equals one.)
- 84 colored plastic sections:
 - 12 green halves
 - 24 gray quarters
 - 48 eighths
- 18 Level 2 match-to-sample templates (blue border)
- 2 Level 3 pattern templates (red border)
- 25 plastic markers for Level 3 templates

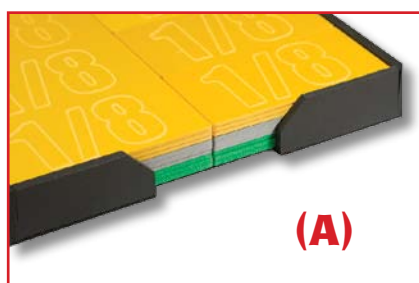


Procedure

Level 1: Assemble Frame

Setup: Place a Fraction Frame in the center of the work area. Remove the sections and stack them above the Frame, as pictured above, with the engraved side facing up. Students assemble like colors in consecutive layers, three layers per color and nine layers per Fraction Frame.

- Place two green pieces ($\frac{1}{2}$ sections) face up, side by side in the Fraction Frame. Repeat to complete three green layers.
- Place four gray pieces ($\frac{1}{4}$ sections) face up, on top of the green layers to form an additional single layer. Repeat to complete three gray layers.
- Place eight yellow pieces ($\frac{1}{8}$ sections) face up, on top of the gray layers to form an additional single layer. Repeat to complete three yellow layers.
- The completed frame should have 3 layers of green $\frac{1}{2}$ sections, 3 layers of gray $\frac{1}{4}$ sections, and 3 layers of yellow $\frac{1}{8}$ sections, as pictured in (A).



(A)

Level 2: Match to Placed Template

Setup: Select the blue-bordered templates and stack them to the left of a Fraction Frame. If using only one Frame, select nine templates labeled either 2A or 2B in the upper left corner. If using both Fraction Frames, use all 18 templates with the 2A templates on top. Remove the sections and stack them above the Frame(s), as pictured in (A), with the engraved side up.

- Take the top template and lay it in the Fraction Frame.
- Place the matching pieces on the template, as pictured in (B).
- Lay the next template over the previous layer and place the matching pieces on the template.
- Repeat until all the templates are completed.



(B)

Quality Criteria

The Fraction Frames must be assembled with like colors in consecutive layers, three layers per color with engraved side up in Level 1. For Level 2 & 3: Fraction Frames must be assembled to match templates.

Level 3: Match to Pattern Templates

Setup: Select both of the red-bordered templates and put them to the left of the Fraction Frames. Place the bag of markers near the templates. Remove the sections and stack them above the Frame(s), as pictured in (A), with the engraved side up.

- Using the top template card, find the pieces that match the pattern in the first sample (number 1) and place them in the empty Frame.
- Take one of the markers and place it on the template pattern just completed, as pictured in (C).
- Continue with the next layer of pieces that match the pattern in the second sample. Once completed, place a marker over the number 2 pattern.
- Repeat until all the samples on the card(s) are marked and each Frame has nine complete layers.



(C)

Variation with Fraction Frames

- **Fraction Puzzle:** Start with an empty Fraction Frame. Place any one piece inside the frame next to the outside edges, as pictured in (E). Instruct students to use any color or number of pieces to complete the layer without overlapping pieces or leaving any gaps. Once accomplished, remove the pieces and select another starter piece and repeat.

Disassembly

The task will need to be disassembled before it is administered again.

Setup

Place Frames as in the assembly task and set the open storage box near the Frames.

Procedure - All Levels

- Remove all pieces from Frames and stack them separately according to size/color..
- Remove any templates from the Frames and place them in the plastic envelope.
- Replace the pieces into the Frames according to size/color (as in Level 1), or randomly in other patterns.
- Collect all plastic markers into the plastic bag.
- Place the Fraction Frames, templates, and markers in the storage box.