CLIFF DWELLINGS

Here's what we used...

SCENE A RAMA® Items

- **Mountain Diorama Kit**
- **Sculpting Kit**
- **Large Project Base & Backdrop**

Household Items

- Cutting Surface
- Disposable Cups
- Hobby Knife
- Masking Tape
- Measuring Spoons
- Newspaper
- Pan for Water
- Rolling Pin
- Ruler
- Scissors
- Small Sticks & Tree-like Twigs
- Wax Paper

Did you know?

Cliff dwellings are impressive, archaeological wonders built seven centuries ago in the shelter of canyon walls. They were constructed by a branch of the Pueblo Indians. Some cliff dwelling communities housed as many as 1,500 people. Most cliff dwellings are located in the Four Corners area where Arizona, New Mexico, Colorado and Utah meet.

Fun Fact!

The largest cliff dwelling in the United States is called Cliff Palace and is located in Mesa Verde National Park in southwest Colorado.
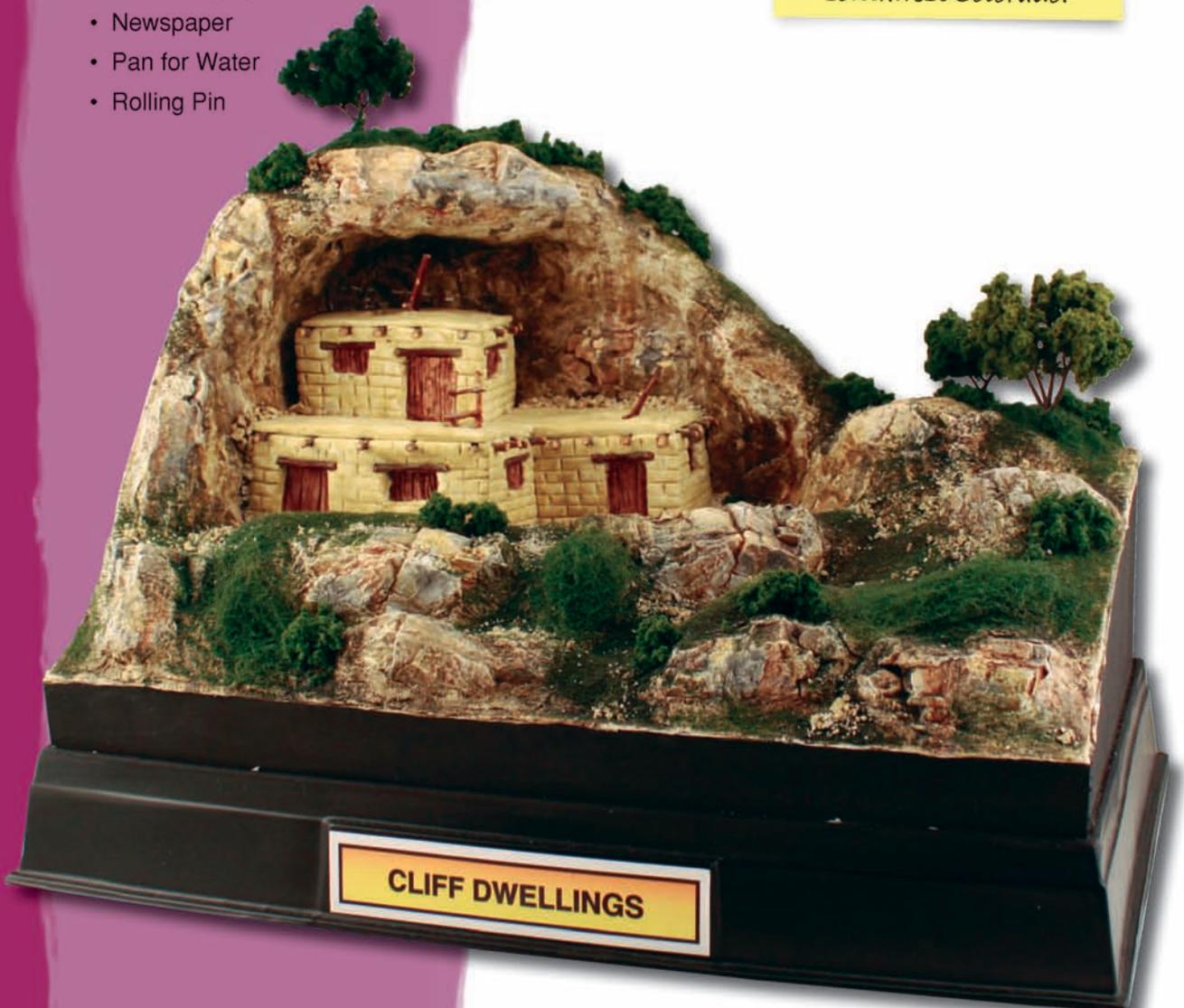
CLIFF DWELLINGS

Part 1: Create Cliff Dwelling Adobe Structure

1

ℹ Cliff Dwelling
- Use the Cliff Dwelling template to build your structure.
- Build a practice structure from a cardboard *Side Panel* before building clay dwelling. Make adjustments to template, if desired.

NOTE: Our dwelling is a two-story, three room structure, built with just the front and side walls and a roof.

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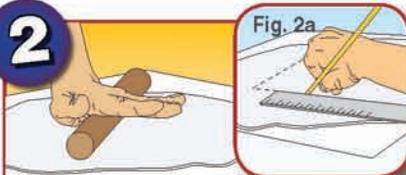
Fig. 2a

ℹ Sculpt
- Flatten *Clay* (approx. 1/8" thick) with rolling pin between two sheets of wax paper.
- Following the template, cut out *Clay* using the *Sculpting Tool*. (Fig. 2a)
- To keep *Clay* fresh, store cutouts between sheets of wax paper or in a plastic bag.

3
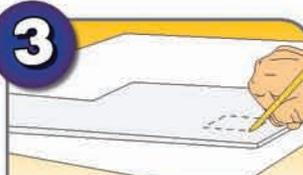
- Using the *Sculpting Tool*, cut openings in roofs for ladder.

NOTE: Our Cliff Dwelling was modeled after the Betatakin Ruin in Navajo County, AZ, where some earthen roofs and roof ladders are still intact after 700 years.

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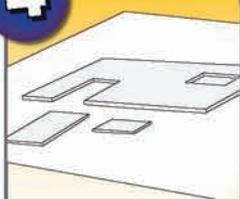
- Cut out windows and doors.
- Carefully remove cutouts for use in Step 5.

5

- Flatten door and window cutouts (1/16").
- Use the *Sculpting Tool* to add markings to resemble wooden boards.
- Add some light score marks to enhance wood look.

6

Fig. 6a

- Mark walls to create the look of adobe brick.
- Make notches along top of walls for roof beam supports. (Fig. 6a)
- Square walls with ruler.

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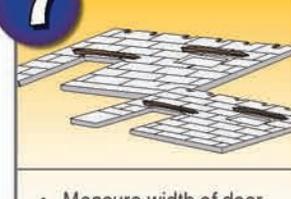
- Measure width of door and window openings.
- Cut small sticks to fit over openings.
- Gently press into *Clay* and glue to hold.
- Let dry overnight.

8
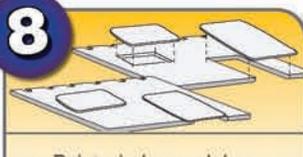
- Paint window and door cutouts.
- Apply *Project Glue* around backside of window and door openings.
- Press window and door cutouts into glue (be sure decorative side is visible and straight).
- Let dry.

9

ℹ Clay Structure
- Assemble walls with *Project Glue*.
- Let dry.

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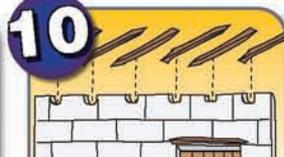
- Cut small twigs into 1/2" pieces (roof beam supports).
- Apply *Project Glue* in roof beam notches.
- Gently press sticks into notches.
- Let dry.

11

- Attach roof to first story with *Project Glue*.
- If roof is in two pieces, apply *Project Glue* where they meet.
- Let dry.

12

- Measure the height of the structure and cut out roof support posts from a *Side Panel* (used during building assembly in Step 13).
- 1" wide x height of structure, plus 1".

**NOTE:** Cut 4 supports for first story and cut 1 support for second story.

13

Back

- Fold a 1/2" lip on top and bottom.
- Attach roof supports to first story with *Project Glue*. Let dry.

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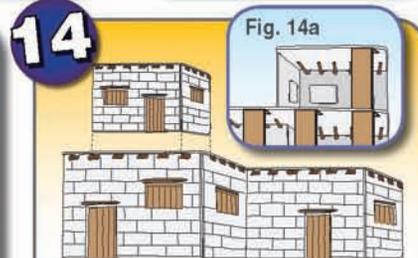
Fig. 14a

- Glue second story to top of first story.
- Add roof support to back corner of second story. (Fig. 14a)
- Let dry.

15

- Cut sticks into desired lengths to make ladders.
- Assemble with *Project Glue*.
- Test fit ladders through roof openings on adobe dwelling.
- Set aside to dry.

16
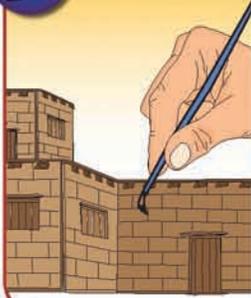
Paint

- Using *Project Paints*, finish painting the cliff dwelling.
- Set aside to dry.

TIP! Our dwelling was painted with diluted light tan paint (1-part paint to 1-part water). This allows the paint to seep into all the cracks and crevices. The doors and shutters were painted with slightly diluted brown.

Part 2: Create Cliff Dwelling Terrain

1

Rock Castings

- Mix and use *Casting Plaster* as instructed.
- Pour into *Rock Mold*, let set for 30-40 minutes.
- To dislodge rocks, turn *Rock Mold* tray upside down and twist slightly.

2

Fig. 2a

Terrain Profile

- Using a hobby knife, cut a 2"-3" strip along top of *Backdrop*.
- Cut off side flaps from strips at folds. (Fig. 2a)
- This is front panel for *Project Base*.
- Draw terrain design on remaining *Backdrop* and cut it out.

3

- Attach *Backdrop* and front panel in grooves on *Project Base* using *Project Glue*.
- Tape to base for extra support.
- Make sure the label area is facing front.

4

Newspaper Wads

- Arrange newspaper wads into desired terrain shape.
- Tape to hold shape of terrain.
- Leave flat area for adobe dwelling.

5

Fig. 5a

- Cut a section of *Side Panel* to form a landing for dwelling.
- Place in desired location.
- Test fit adobe dwelling with ladders. (Fig. 5a)
- Tape landing in place.

6

- Arrange newspaper wads into a cliff around location of dwelling.

7

Plaster Cloth and **Edging**

- Cover entire newspaper terrain with wet *Plaster Cloth* (3" strips), bumpy side up.
- Smooth each strip with wet fingers to fill holes in cloth.
- Apply 2 layers of *Plaster Cloth*.
- To plaster cloth difficult to reach areas, cut smaller strips of *Plaster Cloth*.
- Turn diorama upside down to plaster cloth ceiling of cliff.

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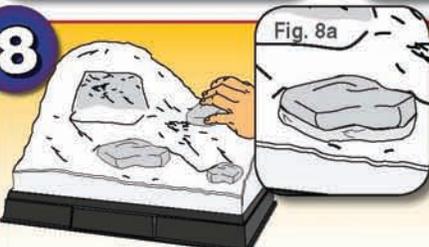
Fig. 8a

Attach and Blend Rocks

- Attach rocks to *Plaster Cloth* terrain.
- Press in place in desired locations.
- Poke 1" strips of wet *Plaster Cloth* around rock edges to fill in gaps. (Fig. 8a)
- Let dry.

9

Leopard Spot

- Dilute *Rock Colors*.
- Paint rocks with the Leopard Spot paint technique.

NOTE: Save some diluted *Rock Colors* for Step 12.

10

Earth Undercoat

- Brush diluted *Earth Undercoat* over entire terrain (avoid rocks).
- Let dry.

NOTE: Save some diluted *Earth Undercoat* for Step 12.

11

🔲 **Project Glue in Spray Bottle** and **Ground Cover**

- Spray diluted *Project Glue* on greenery areas (avoid rocks).
- Using *Plastic Cup and Sifter Lid*, sprinkle *Green Grass* on glue. Spray with diluted *Project Glue*.
- Lightly sprinkle *Evergreen Accent* to highlight.
- Lightly sprinkle *Forest Green Accent* around rocks.
- Spray additional *Project Glue* to seal.

12

🔲 **Talus**

- Pour *Talus* into remaining *Earth Undercoat* and *Rock Colors*.
- Mix with *Stir Stick*.
- Remove *Talus*, and let dry on newspaper.

13

- Spray diluted *Project Glue* on desired "rock debris" areas.
- Sprinkle *Talus* on glue.
- Spray additional diluted *Project Glue* on top of Talus to adhere.
- Let dry.

14

Fig. 14a
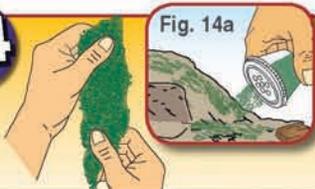
🔲 **Foliage Fiber**

- Separate layers of *Foliage Fiber*.
- Stretch until very thin and lacy.
- Lay over greenery areas in preferred locations. Spray with diluted *Project Glue*.
- Sprinkle *Forest Green Accent* to highlight. (14a) Spray with diluted *Project Glue* to seal.

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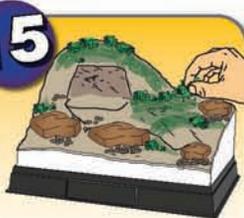
- Apply *Project Glue* where you would like *Shrubs*.
- Press *Shrubs* into glue.

16

Fig. 16a

Fig. 16b

Fig. 16c

🔲 **Natural Armatures and Puffy Tree Foliage**

- Prepare Puffy Tree Foliage. Sprinkle with *Evergreen Accent*. (Fig. 16a)
- Apply *Project Glue* to "leaf" area of twig and press tree foliage into *Glue*. (Fig. 16b)
- Attach Puffy Tree Foliage to landscape for bushes. (Fig. 16c)

17
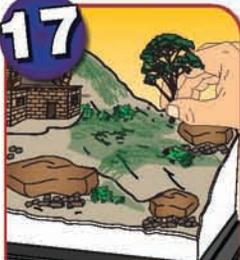
🔲 **Plant Trees**

- Plant trees in desired locations.
- Let dry.

18

- Test fit cliff dwelling on diorama. If dwelling does not fit in opening properly, mark tight-fitting locations with a pencil.
- Using a hobby knife, cut into terrain, then press in with fingers.
- Test fit dwelling again. Repeat until dwelling has a nice fit.

19
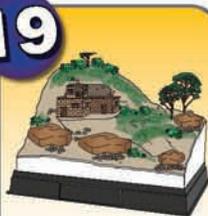
- Attach cliff dwelling to diorama with *Project Glue*.
- Insert ladders and glue in place.

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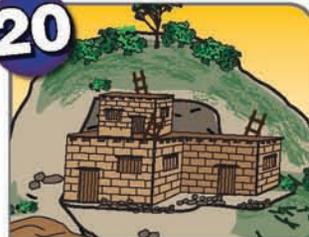
- To blend dwelling with terrain, apply *Project Glue* along base of dwelling and press in *Talus* and *Shrubs*.

21
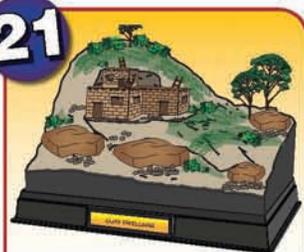
🔲 **Labels**

- Paint *Backdrop* material with black paint.
- Label and add signage to your project.

Helpful Hint
Use black acrylic or latex paint to paint the exterior Backdrop material.

🔲 See the *A+ PROJECTS & DIORAMAS: The Student's Handbook* (SP4171) for more information.
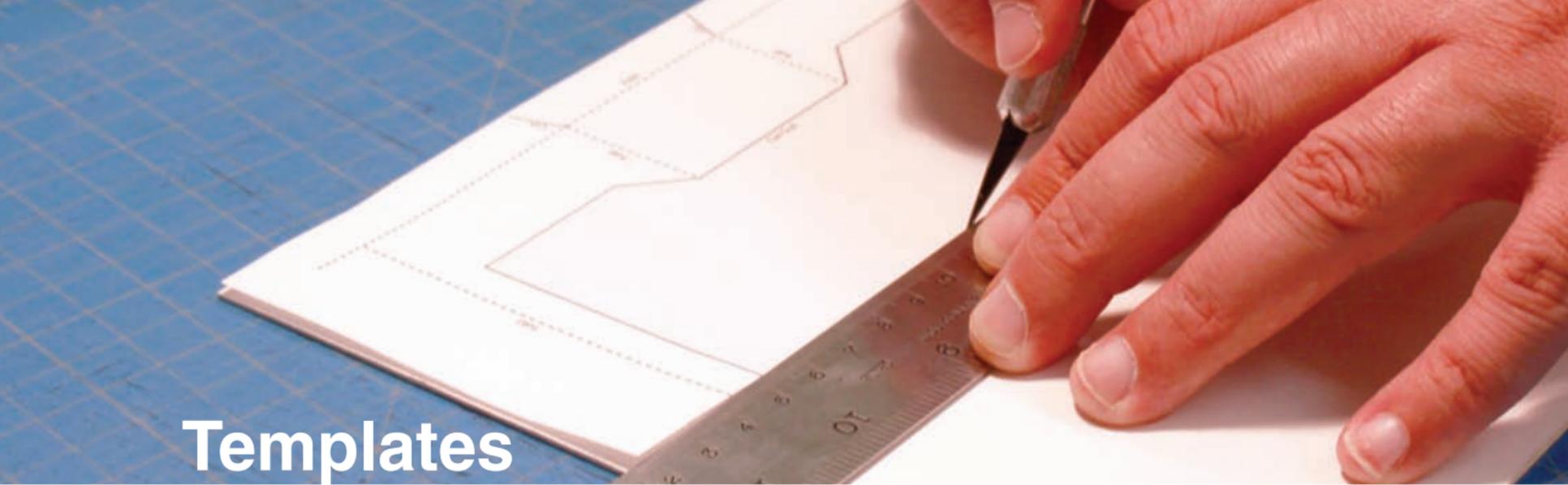
Templates

- Photocopy, trace or scan template onto white paper. Cut out, then trace onto specified material.
- If needed, reduce or enlarge templates to fit your diorama.
- Each template includes basic assembly instructions and needed materials.
- Read through the corresponding project instructions for clarification on using template.
- Short dotted lines -------------- indicate fold lines
- Long dotted lines — — — indicate score lines
- Bold, solid lines ——————— indicate cut lines

Cliff Dwelling

Cliff Dwellings

- Copy template on white paper, then cut out.
- Trace cutout on Sculpting Clay or Construction Board.
- Assemble with Project Glue.
- Attach beams (Project Sticks or twigs found outside) in notches.
- Using ladder template as a guide, assemble ladder with Project Sticks or twigs found outside.

TIP!
Save window cut-outs for window and door coverings.

Second Story Placement

Ladder Opening

First Story Roof (D)
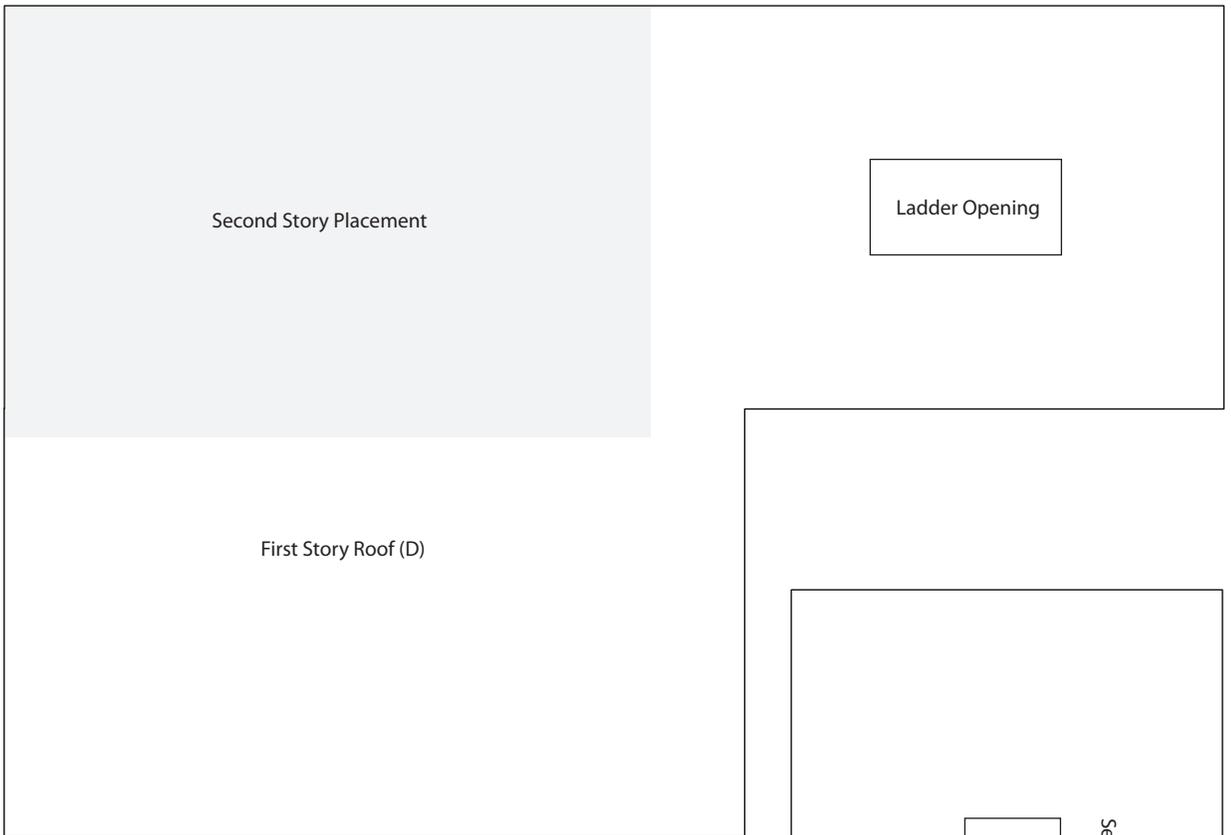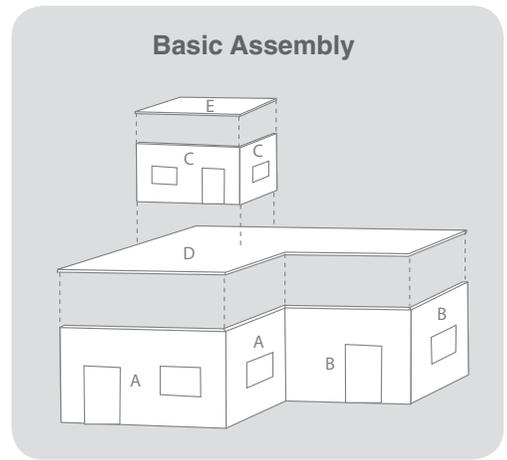
First Story Ladder

Second Story Ladder

Ladder Opening

Second Story Roof (E)

First Story Front (A)

First Story Side (A)

First Story Front (B)

First Story Side (B)

Second Story Front (C)

Second Story Side (C)