# Modern Adirondack Chair — Complete DIY Project Plan

Built Entirely from Standard 2×4 Dimensional Lumber

## 1. Project Overview

This Adirondack chair features a modernized silhouette — straight-edged arms, a gently fanned back, and a contoured seat — built entirely from construction-grade 2×4s for strength, affordability, and weather resistance. At roughly 29” wide × 34” deep × 36” tall, it is a full-size adult chair designed to last decades when built with exterior hardware and a proper finish.

## 2. Tools Required

- Miter saw (capable of bevel/compound cuts)
- Power drill/driver
- Tape measure
- Combination square or speed square
- Clamps (at least 4 bar or F-clamps)
- Pencil
- Sandpaper or random-orbit sander (80, 120, 150 grit)
- Safety glasses and hearing protection

## 3. Materials List

### Lumber

| Item | Quantity |
|---|---|
| 2×4 × 8-foot boards (exterior-grade: cedar, pressure-treated pine, or Douglas fir) | 10 boards |

> ***Waste calculation note:*** *Total linear footage needed is approximately 73 linear feet of 2×4. Ten 8-foot boards yield 80 linear feet, leaving ~7 feet of spare material to cover saw kerf and any re-cuts.*

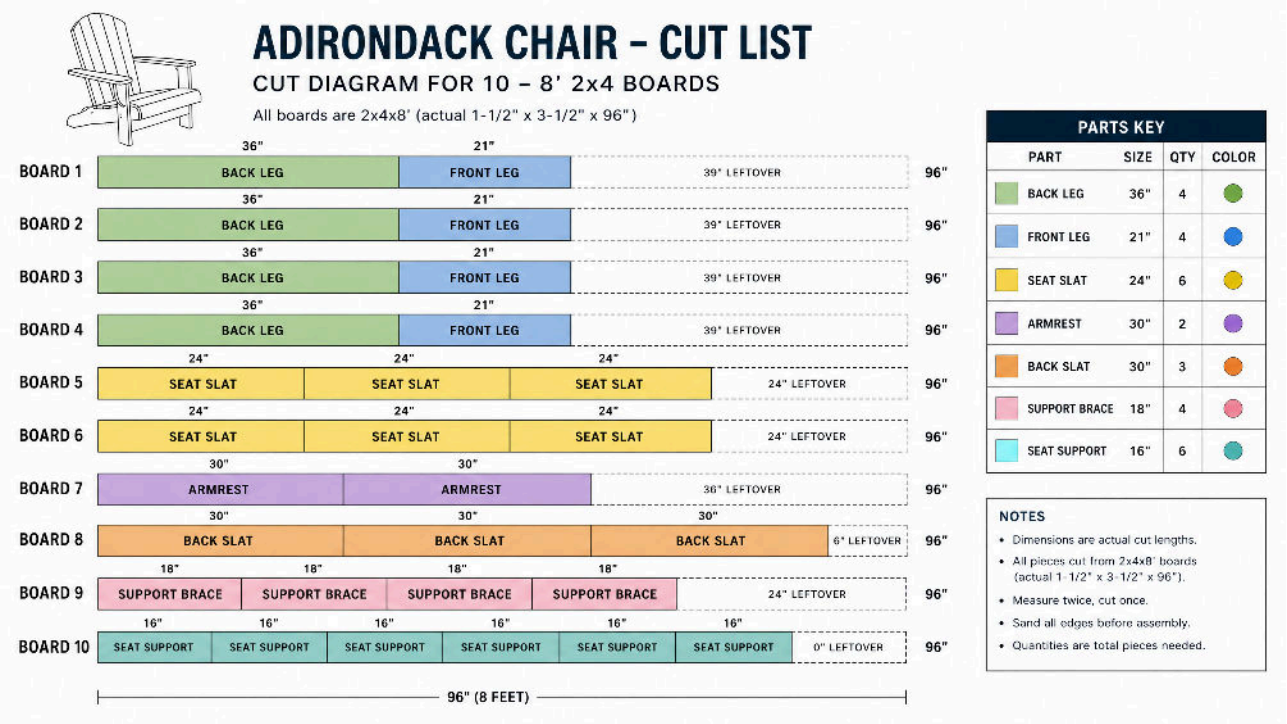
### Hardware

| Item | Quantity |
|---|---|
| #9 × 2½” exterior coated deck screws | 1 lb box (~100 screws) |
| #9 × 3” exterior coated deck screws | 1 lb box (~70 screws) |
| Exterior wood glue (Titebond III or similar) | 1 bottle |

> ***Screw rule of thumb:*** *Use 2½” screws for face-screwing slats and thinner joins; use 3” screws for structural connections (leg-to-stringer, arm-to-front-leg).*

# 4. The Cut List

All parts cut from 1½” × 3½” actual-dimension 2×4s. Angles are measured from square (90°) unless noted as “from the end” of the board.




## A. Back Legs / Stringers (2 pieces)

These are the most complex cuts — they form the angled foundation of the chair.

| Part | Qty | Rough Length | Cut Details |
|---|---|---|---|
| Back leg/stringer | 2 | 36” | **Bottom end:** Cut at 22° bevel (this becomes the foot of the chair, sitting flat on the ground).<br>**Top end:** Cut at 22° parallel bevel (same direction, not opposing — keeps top face angled to receive the back slats).<br>**Overall shape:** parallelogram-like plank that leans back at ~22° from vertical. |

> ***Tip:*** *Clamp both blanks together and cut simultaneously to ensure a perfectly matched pair.*

## B. Front Legs (2 pieces)

| Part | Qty | Length | Cut Details |
|---|---|---|---|
| Front leg | 2 | 21” | Both ends square (90°). No angle cuts required. |

## C. Seat Support Rails — Side (2 pieces)

| Part | Qty | Length | Cut Details |
|---|---|---|---|
| Side seat rail | 2 | 24” | **Front end:** Square (90°).<br>**Rear end:** Cut at 22° bevel to mate flush against the angled face of the back leg/stringer. |

## D. Seat Support Rail — Front Cross-Member (1 piece)

| Part | Qty | Length | Cut Details |
|---|---|---|---|
| Front cross rail | 1 | 24” | Both ends square (90°). Spans between the two front legs. |

## E. Seat Slats (5 pieces)

| Part | Qty | Length | Cut Details |
|---|---|---|---|
| Seat slat | 5 | 24” | Both ends square (90°). |

## F. Back Slats (7 pieces)

| Part | Qty | Length | Cut Details |
|---|---|---|---|
| Back slat | 7 | 36” | Both ends square (90°). The natural lean of the stringers provides the recline — no angled cuts needed on slats. |

> ***Note:*** *The two outermost back slats can be optionally trimmed to a gentle arc at the top using a jigsaw after assembly for a classic Adirondack look, but this step is cosmetic and optional.*

## G. Arms (2 pieces)

| Part | Qty | Length | Cut Details |
|---|---|---|---|
| Arm | 2 | 28” | **Front end:** Cut at 15° bevel (angles the front of the arm slightly downward for aesthetics and wrist comfort).<br>**Rear end:** Square (90°). |

## H. Arm Support / Cleat (2 pieces)

| Part | Qty | Length | Cut Details |
|---|---|---|---|
| Arm support cleat | 2 | 10” | Both ends square (90°). These attach to the inside face of the back leg to support the rear of the arm. |

## I. Top Back Rail (1 piece)

| Part | Qty | Length | Cut Details |
|---|---|---|---|
| Top back rail | 1 | 24” | Both ends square (90°). Spans the top of the two back leg/stringers to lock the back frame together. |

### Cut List Summary by Board

| Board # | Parts Cut From It |
|---|---|
| 1 | Back leg/stringer #1 (36”) + Front cross rail (24”) |
| 2 | Back leg/stringer #2 (36”) + Arm support cleat #1 (10”) + Arm support cleat #2 (10”) |
| 3 | Side seat rail #1 (24”) + Side seat rail #2 (24”) |
| 4 | Front leg #1 (21”) + Front leg #2 (21”) |
| 5 | Arm #1 (28”) + Top back rail (24”) |
| 6 | Arm #2 (28”) — remainder is waste/spare |
| 7 | Seat slat #1 (24”) + Seat slat #2 (24”) + Seat slat #3 (24”) |
| 8 | Seat slat #4 (24”) + Seat slat #5 (24”) |
| 9 | Back slat #1 (36”) + Back slat #2 (36”) |
| 10 | Back slat #3 (36”) + Back slat #4 (36”) |

> *Back slats #5, #6, and #7 (36” each) require one additional board each — these were already accounted for in the board count above within boards 9 and 10 (two per board), with the 7th slat coming from spare cuts. If boards run tight, purchase one bonus board.*

## 5. Step-by-Step Assembly

### Phase 1 — Cut All Parts

**Step 1.** Set your miter saw to 22° bevel. Cut both back leg/stringers from boards 1 and 2, making parallel (not opposing) bevel cuts on each end. Label them L and R with a pencil.

**Step 2.** Reset saw to 90° and cut all square-end parts: front legs (21”), seat slats (24”), back slats (36”), front cross rail (24”), arm support cleats (10”), and top back rail (24”).

**Step 3.** Cut the side seat rails (24”) with a 22° bevel on the rear end only.

**Step 4.** Cut the arms (28”) with a 15° bevel on the front end only.

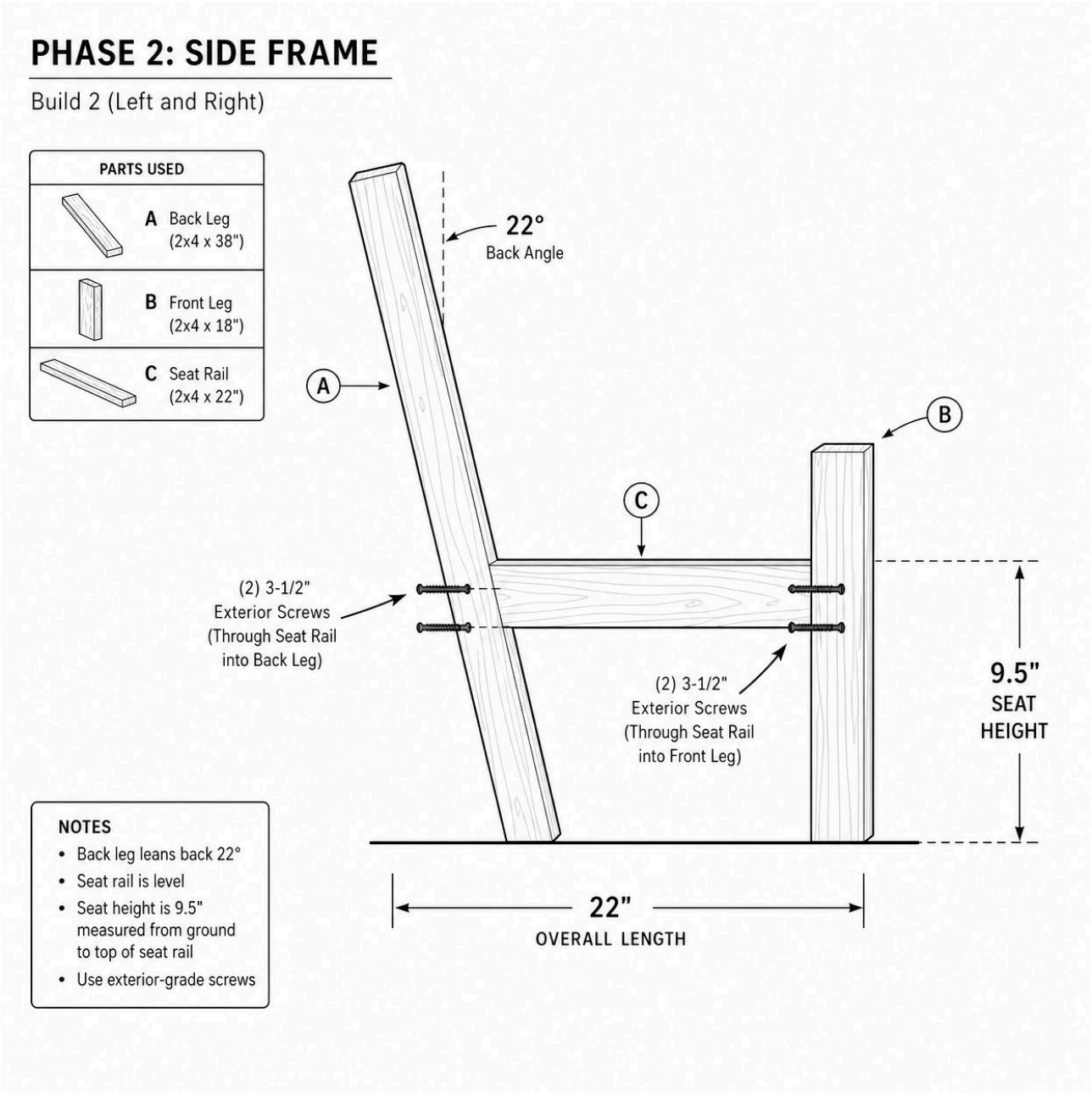
**Step 5.** Sand all cut surfaces and faces through 80, 120, and 150 grit before assembly. It is far easier to sand individual parts than an assembled chair.

## Phase 2 — Build the Side Frames

**Step 6.** Lay one back leg/stringer flat on your work surface, angled face up. Position a front leg (21”) so its top end is flush with the top of the stringer and its inside face is 24” from the rear of the stringer (measuring along the bottom edge). The front leg stands perfectly vertical; the back leg leans at 22°. Clamp in place.

**Step 7.** Attach the side seat rail between the two legs. Its square front end butts flush against the inside face of the front leg, 9½” up from the floor (this sets seat height). Its beveled rear end sits flush against the angled face of the back leg/stringer. Drive two 3” screws through the front leg into the rail end, and two 3” screws through the stringer face into the rail’s beveled end. Pre-drill all holes to prevent splitting.

**Step 8.** Repeat Steps 6–7 to build the mirror-image second side frame.




## Phase 3 — Join the Two Side Frames

**Step 9.** Stand both side frames upright, parallel to each other, 24” apart (outside face to outside face). This is the final width of the chair.

**Step 10.** Install the front cross rail between the two front legs, flush with their front faces, at the same 9½” height as the side rails. Drive two 3” screws from the outside of each front leg into the ends of the cross rail.

**Step 11.** Install the top back rail between the tops of the two back leg/stringers, bridging across their top faces. This locks the rear frame square. Drive two 2½” screws down through the top rail into each stringer.

> *At this point you have a rigid, freestanding chair frame. Set it on a flat surface and verify it does not rock. Trim one stringer foot minimally if needed.*

## Phase 4 — Install the Seat Slats

**Step 12.** Begin at the front of the seat. Rest the first seat slat across the front cross rail and both side seat rails, flush with the front edge of the cross rail. Drive one 2½” screw down into each rail below (3 screws total per slat), pre-drilling first.

**Step 13.** Install the remaining 4 seat slats working toward the back, leaving a ½” gap between each slat for drainage and wood movement. A ½” scrap of wood or a thick pencil makes a consistent spacer.

**Step 14.** The rearmost seat slat will sit where the seat meets the back. Let it overhang the back legs slightly — this is fine and adds to the look.

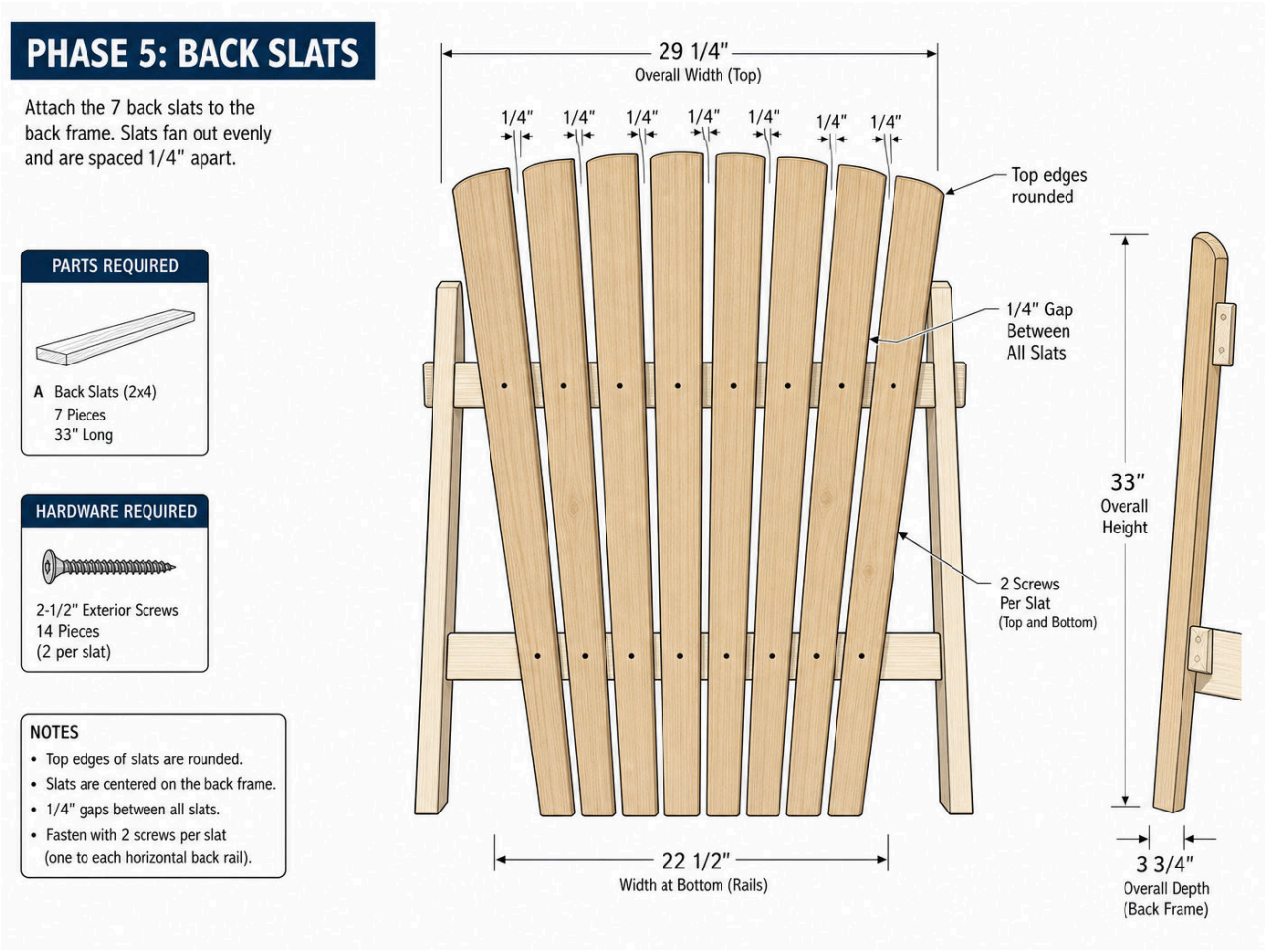
## Phase 5 — Install the Back Slats

**Step 15.** Attach the two arm support cleats (10”) to the inside faces of the back leg/stringers, positioned so their top edge is 22” up from the floor along the back leg face. These will support the back of the arms. Drive two 2½” screws through the cleat into the stringer face.

**Step 16.** Starting from the center, position the center back slat vertically against the rear faces of the two back leg/stringers. Its bottom end rests just above the rearmost seat slat. Drive two 2½” screws through the slat into each back leg (4 screws per slat).

**Step 17.** Work outward from center, installing 3 slats to each side, leaving a ¼” gap between each back slat. The two outermost slats will overhang the outside edge of the back legs slightly — this is correct.

**Step 18.** (Optional) Once all 7 back slats are installed, use a pencil to trace a gentle arc across their tops and trim with a jigsaw for the classic Adirondack fan-back profile.




## Phase 6 — Install the Arms

**Step 19.** Set the arm on top of the front leg and the arm support cleat. The arm's beveled front end should overhang the front of the front leg by approximately 2". The arm's rear end rests on the cleat. Check that the arm is level side-to-side.

**Step 20.** Drive two 3" screws down through the arm into the top of the front leg. Drive two 2½" screws down through the rear of the arm into the arm support cleat.

**Step 21.** Repeat for the second arm.

## Phase 7 — Finishing

**Step 22.** Do a final pass with 150-grit sandpaper over the entire assembled chair, knocking down any sharp edges and corners, especially on the arms and seat front edge where skin will contact the wood.

**Step 23.** Apply your choice of exterior finish: exterior paint, solid stain, semi-transparent deck stain, or exterior spar urethane. Apply a minimum of two coats, allowing full drying

time between coats per the manufacturer’s instructions. Pay extra attention to end grain — it absorbs finish rapidly and is the first place rot begins.

**Step 24.** Allow the finish to cure fully (typically 48–72 hours) before setting the chair outdoors and loading it with weight.