Mindsky – Comprehensive Design Brief (Updated)

CONCEPT
Mindsky is a personal productivity system designed for ADHD/ASD cognitive patterns. It externalizes your mental landscape into a dynamic sky of living clouds, where milestones, tasks, and subtasks take the form of soft animated cloud-blobs. Completing work clears clouds from the sky and reveals sunlight, reflecting clarity, emotional progress, and momentum. The system avoids rigid numbers or charts and instead uses atmospheric feedback to motivate gently and visually.

Mindsky's purpose is to reduce overwhelm and friction. By embodying tasks as clouds in a sky that reacts organically to your activity, it creates an environment where progress feels calm, intuitive, and encouraging. The interface minimizes cognitive load while maximizing emotional resonance.

TOP USE CASES
1. Breaking overwhelming goals into approachable clouds.
2. Tracking progress without numeric pressure or deadlines.
3. Maintaining motivation via sunlight, dissolves, and atmospheric feedback.
4. Reducing distraction with focus mode.
5. Identifying neglected areas through darker, stormier cluster behavior.
6. Mobile-friendly daily updates with minimal UI friction.

WORLD STRUCTURE
• One global sky representing the user’s entire mental ecosystem.
• Milestones = large cloud clusters.
• Tasks orbit milestones.
• Subtasks appear inside tasks during focus mode.
• One overarching goal: clear the sky.

VISUAL MODEL
• Clouds are geometric, liquid-style blobs rendered with Pixi.js.
• Milestones: largest radius, define cluster centers.
• Tasks: radius grows with subtask count.
• Subtasks: appear inside task cloud in focus mode.
• Hover: primary cloud scales to ~1.15×, neighbors to ~1.05×.

PHYSICS & INTERACTIVITY MODEL (UPDATED)
Mindsky allows direct playful interaction with clouds. Users can drag clouds around freely as a form of tactile engagement.

Drag & Physics Rules
• Any cloud (milestone, task, subtask) may be grabbed and dragged.
• Each cloud has a “home anchor” based on its structural parent.
• When released:
– If dropped into neutral sky → physics gently returns it to its home anchor.
– If dropped onto a milestone → the dragged cloud becomes a task under that milestone.
– If dropped onto a task → the dragged cloud becomes a subtask of that task.
• Clouds smoothly reorganize after reassignment.
• Dragging disrupts but does not break clustering—clusters reform after release unless reassigned.

Clustering Behavior
• Tasks orbit milestones (160–220px radius).
• Clouds return to ideal orbit after free dragging.
• Subtasks reposition inside the task cloud during focus mode.

CAMERA, ZOOM & FOCUS MODE
• Overview auto-fits all milestones.
• Single-click a milestone → 1.6× zoom.
• Single-click a task → 2.0× zoom.
• Non-focused clouds blur (5–10px) and fade to alpha 0.3.
• Clicking background exits focus.

COMPLETION BEHAVIOR
• Binary completion only.
• Subtasks shrink/fade their parent task.
• Completed tasks dissolve (300–400ms).
• Completed milestones dissolve (500–700ms).
• Dissolves use particles and soft sounds.

DYNAMIC SUNLIGHT & WEATHER SYSTEM
Variables:
• completionRate (48h window)
• totalImportanceOutstanding
• neglectScore (time since last activity × importance)

Brightness formula:
sunBrightness = clamp(0.2 + 0.6*M - 0.4*L, 0, 1)

Neglected clusters darken, roughen, and wobble slightly.

INTERACTION MODEL
• Plus-cloud (click or drag).
• Contextual creation via dragging.
• Drag any cloud to explore or reassign.
• Right-click opens edit modal.
• Drag to edge for delete zone.

MODALS
Milestones: title, description, importance, due date.
Tasks: title, description, tags, importance, due date.
Subtasks: simplified fields.

SETTINGS
• Sound on/off.
• Night mode.
• Export/Import JSON.

TECH STACK
React, TypeScript, Vite, Tailwind, Pixi.js.
Express backend.
SQLite via Prisma or Drizzle.
Local-only autosave.

DOCKER ARCHITECTURE
Three containers: frontend, backend, SQLite volume.

REST API
CRUD for milestones, tasks, subtasks.
Completion/uncompletion endpoints.
GET /sky returns full nested structure.

DATABASE SCHEMA
milestones(id, title, description, importance, dueDate, createdAt, updatedAt)
tasks(id, milestoneId, title, description, tags, importance, dueDate, completed, createdAt, updatedAt)
subtasks(id, taskId, title, description, tags, importance, dueDate, completed, createdAt, updatedAt)
metrics(id=1, totalCompletedCount, lastCompletionAt, momentumScore, sunBrightness)

ANIMATION CONSTANTS
Hover: 1.15× / 1.05×.
Dissolve: 300–700ms.
Zoom: 350–450ms.
Easing: cubic ease-in-out.

GUIDING PRINCIPLES
Emotion-first, calm minimalism, reduce overwhelm, make progress feel rewarding.

Ready for implementation.