WRITE A NOTE TO SHARE YOUR MOOD

HERE SAVE OUR MEMORIES

SCAN HERE

*All blue instructional texts were printed on the bottom of the box.

HAVE SOME YOUR FAVORITE SNACKS

# Anima

VIKI DING
DEA 2730

## A DEVICE THAT LETS YOU OPEN YOUR HEART SAFELY.

## ABSTRACT

Many **college students** experience **emotional isolation** when moving to campuses. Although they may have trusted people to turn to during difficult times, building the safety needed to **communicate vulnerability** often takes years, leaving heavy feelings unspoken in schools. *Campus Safety Magazine* reports that approximately **65%** of college students feel lonely, highlighting the prevalence of emotional isolation. **Anima** is an interactive emotional-support device **designed for emotional expression and long-distance connection**. Each Anima is opened with an easily carried, wearable key, symbolizing continuous emotional accompaniment. Unlocking the box triggers music to mark entry into a safe interaction. When opened, Anima uses blue breathing light and sound to support relaxation, while on-screen prompts guide users to write their thoughts on physical notes and place them inside. The device then responds with encouraging text and sound, and provides access to shared objects or snacks prepared by trusted people, **translating emotional care into tangible forms that support emotional regulation and recovery from low mood**. The design was developed through **precedent research, UX testing, and usability studies**. Findings showed that emotional engagement peaked after users opened the device and encountered its contents, **shifting the design focus toward vulnerability sharing**, with breathing assistance integrated as an intuitive response rather than an explicit activation. For designers, Anima demonstrates **how emotional safety can be translated into physical interactions and visual cues**. More broadly, it suggests **how physical artifacts can support mental well-being** by creating spaces where emotions can be expressed without pressure and vulnerability can be embraced across distances.

## DESIGN ITERATION & DESIGN PROCESS
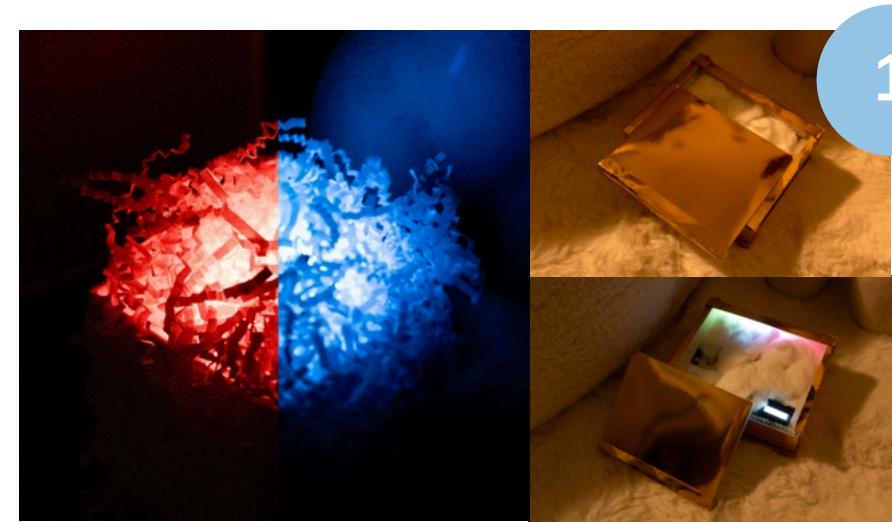
### 1 LOW-FIDELITY PROTOTYPE (ANIMA + GOLDEN BOX)

During early stage, morphological chart and moodboards informed functional exploration and emotional direction across the following prototypes. Two parallel concepts explored: Anima focused on press-activated breathing guidance, while Golden Box focused on vulnerability sharing through opening the box, writing notes, and receiving music or text feedback.

MOODBOARD   MORPHOLOGICAL CHART

### 2 LOW-FIDELITY PROTOTYPE (COMBINED)

The box was redesigned to be openable, allowing users to access shared items and encouraging responses after breathing guidance. Role-play and an initial UX survey were then conducted to evaluate whether users wanted a receiving-and-responding interaction, similar to the Golden Box concept, as a form of further emotional support beyond calming alone.

ROLE-PLAY   UX SURVEY
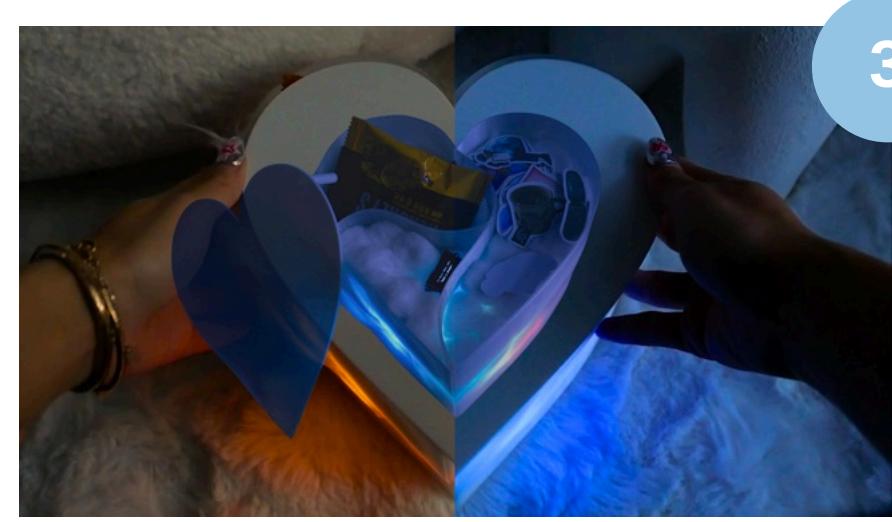
### 3 MID-FIDELITY PROTOTYPE

A semi-transparent, 3D-printed form with internal compartments was introduced to test whether breathing light guidance remained visible when the box was both open and closed, while enabling storage for snacks and written notes. Following this prototype, think-aloud testing and early SUS feedback informed users' preferences for compartment organization and the types of responses they wanted to receive.

THINK-ALOUD   SYSTEM USABILITY SCALE STUDY
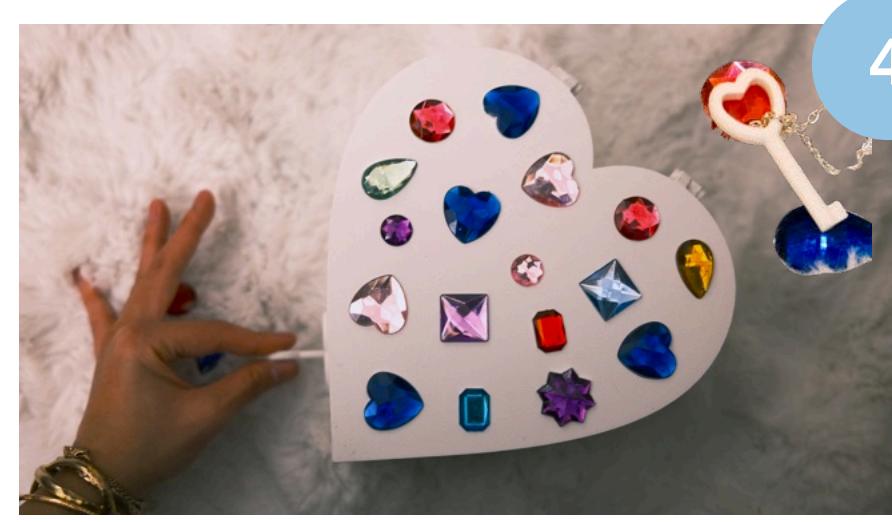
### 4 HIGH-FIDELITY PROTOTYPE

Previous think-aloud observations led to activating breathing guidance only after the box was opened, shifting the primary focus toward vulnerability sharing. A lock-and-key entry was introduced to reinforce privacy. Interior zones for snacks, notes, and memories were clarified through printed cues, while exterior customization was emphasized. A second UX survey and SUS study further validated refinements to user experience and overall usability.

UX SURVEY   SYSTEM USABILITY SCALE STUDY

## USER EXPERIENCE SURVEY

The first survey focused on a breathing-guided prototype (1st prototype), while also collecting early feedback on a vulnerability-sharing concept. Insights from this stage led to a key design decision to combine both functions into a single system. As the final prototype became more complex and shifted its focus toward vulnerability sharing, a second survey was conducted to evaluate the revised interaction.

### FIRST UX SURVEY (CONDUCTED AFTER 1ST PROTOTYPE) --- 6 MALES & 7 FEMALES; AGE 19-21
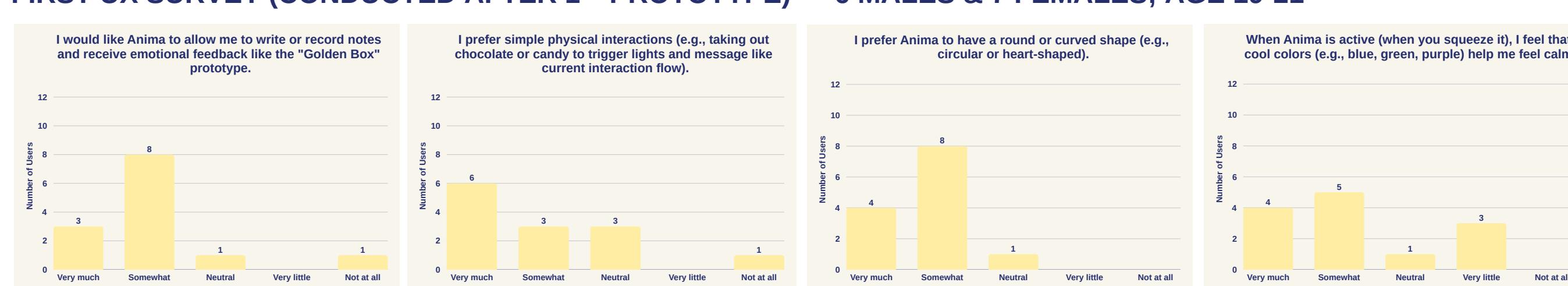


### KEY TAKEAWAYS | DESIGN CHANGES

- **Changed form to a heart-shaped body:** participants preferred rounded shapes for an emotionally soothing device, associating softness and curvature with comfort and care.
- **Integrated "Golden Box" features into the breathing prototype:** users strongly valued the Golden Box functions, especially writing notes and receiving feedback through music or text. This led to the decision to combine vulnerability sharing with breathing guidance into a more complete emotional soothing system.
- **Added customization and DIY elements:** participants' emotional preferences for color varied widely. Some felt calmer with warmer tones, while others preferred cooler light, revealing that emotional comfort cannot be standardized and depends on personal sensitivity and context.
- **Added expressive and relational elements to the interaction:** in response to the open-ended question *"If you could change or add one thing to Anima to make it feel more comforting or alive, what would it be?"*, participants suggested elements such as **"a smile"** or **"inviting friends to write encouraging lines to open when feeling down."** These responses informed both Anima's expressive cues and its focus on shared, relational emotional support.

### SECOND UX SURVEY (CONDUCTED AFTER 4TH PROTOTYPE) --- 3 MALES & 2 FEMALES; AGE 19-21



### KEY TAKEAWAYS | FUTURE POTENTIAL ITERATION DIRECTIONS

- Participants consistently rated Anima as emotionally comforting, meaningful, and useful for expressing difficult emotions.
- The opening interaction continued to strongly convey privacy and emotional safety.
- No major usability issues were identified in the second round of testing.
- Feedback shifted toward minor refinements rather than core design changes, with participants suggesting details such as **"making the Arduino lines more invisible," "making it more comfortable to hold,"** or adding optional features like **"voice memos from friends."**

## THINK ALOUD

**PARTICIPANT 1** (FEMALE, 19)

*"Change the lid to flip upward to create the feeling of "opening the box equals opening the heart.""*

**PARTICIPANT 3** (FEMALE, 19)

*"I'm not that sure where to place each item. It would be great if you can add some instructions."*

**PARTICIPANT 5** (MALE, 21)

*"I think you can make the box wall thicker so the overall look feels warmer and more cozy."*

**PARTICIPANT 2** (FEMALE, 20)

*"I really want an inner compartment to store personal memories between me and my friends"*

**PARTICIPANT 4** (MALE, 20)

*"I think the overall size of the box could be smaller so that it can be carried everywhere easily."*

### OBSERVATION & TAKEAWAY

- Interaction needs clearer next-step cues..
- The box felt too large to carry, suggesting a need for a smaller scale.
- Breathing guidance was overlooked; attention focused on the inside contents, leading to breathing support being embedded more subtly.
- There are requests for the memory compartment for saving any personal items.
- Participants responded more strongly to symbolic actions like "opening the heart," indicating deeper emotional engagement.

## SYSTEM USABILITY SCALE STUDY

🔴 :indicates 1st SUS score from users   🟠 :indicates 2nd SUS score from users
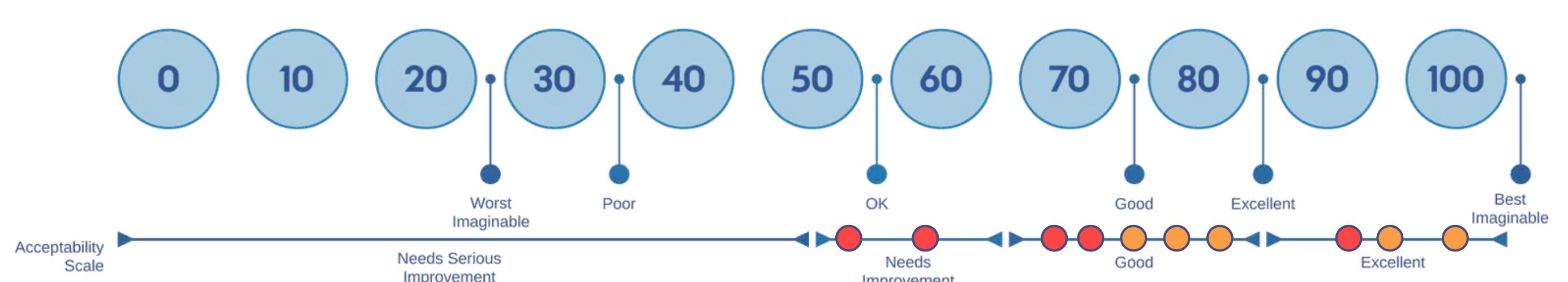


**SUS SCORE: 87.5**   **STANDARD DEVIATION: 9.19**   **SUS RANGE: 75-97**

After the forth prototype iteration, a **second System Usability Scale (SUS)** study was conducted with five participants (3 males and 2 females), yielding an average score of **87.5**, a substantial improvement from the **initial average score of 72.5**, indicating significantly enhanced perceived usability and interaction clarity after 3rd prototype. However, feedback still revealed that **some first-time users required light designer guidance during initial use.** Although semi-transparent instructional text was embedded inside the box, it could be partially obscured once personal objects were placed inside. This suggests an opportunity to support onboarding through **a supplementary instruction guide.**

## SCENARIO STORYBOARD
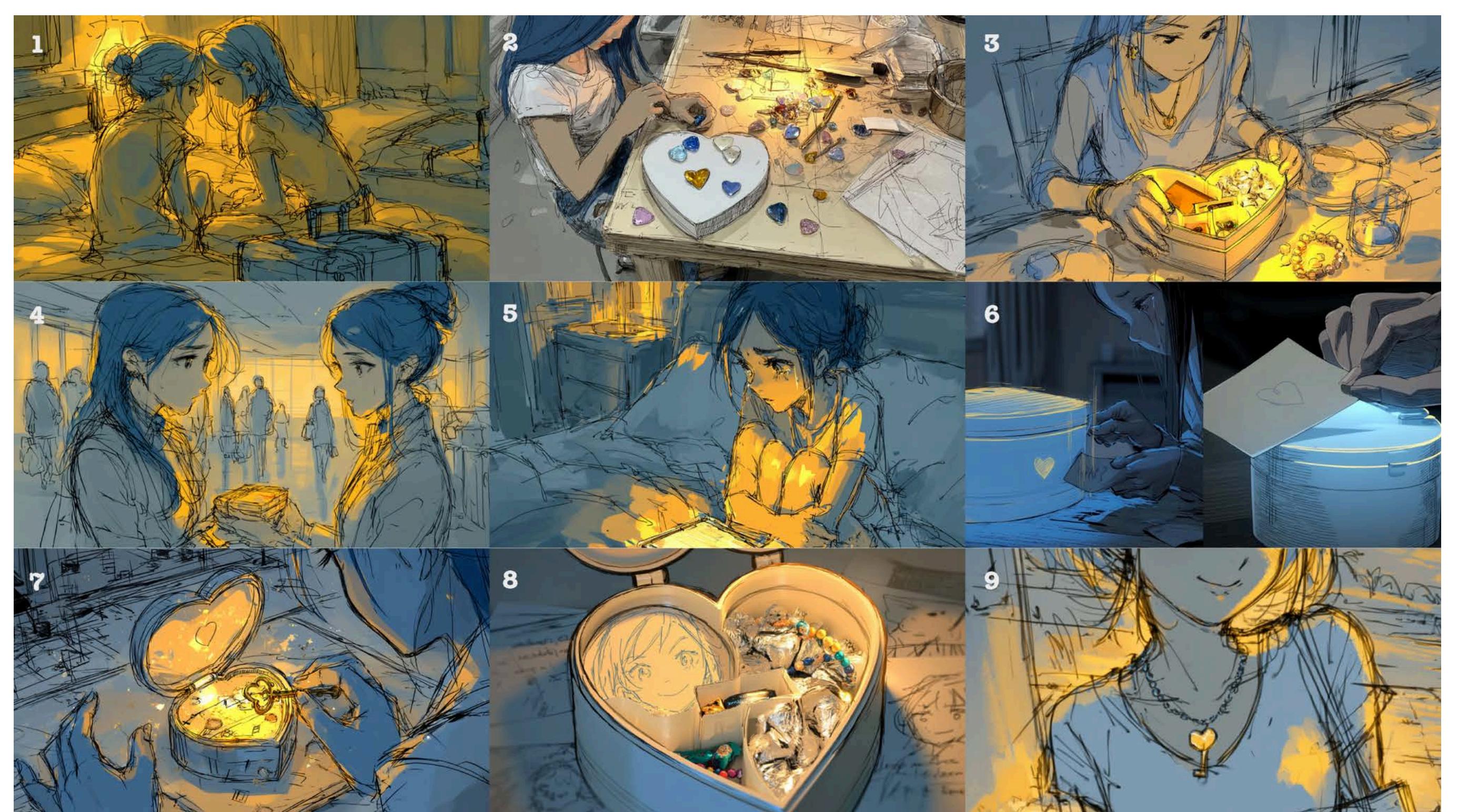


**1: Long-Term Trust**
Two long-term friends share a relationship built on trust and emotional openness.

**2–3: Preparing Anima Before Separation**
Before Friend A leaves for college, Friend B prepares Anima by placing shared objects, handwritten notes, and snacks inside.

**4: Farewell at the Airport**
At the airport, Friend B hands the prepared Anima to Friend A before they part.

**5: Arrival on Campus & Emotional Disconnection**
At the new campus, Friend A faces growing academic and social pressure. Although surrounded by people, there is no one she feels she can truly talk to, and emotions go unspoken.

**6: Emotional Low Point**
In a quiet moment, Friend A remembers Anima. She writes down her worries, treating the act as if she were sharing them with Friend B, before opening the device.

**7: Opening a Safe Space**
Friend A unlocks Anima using the personal key.

**8: Being Met with Care**
Inside Anima, Friend A encounters prepared items and reassuring messages, experiencing emotional support through shared objects and responses.

**9: Carrying the Connection**
Friend A wears the Anima key as a necklace, allowing the sense of connection and support to remain present in daily life.