

SkillCat

CREATIVE BRIEF

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DESCRIPTION

This animated explainer breaks down the common misconceptions around how air conditioning works, specifically the belief that AC units simply generate cold air. Through clean, approachable visuals, it reveals the **true physics** behind the process, showing how systems actually transfer heat from inside the home to the outside. The video presents **complex mechanical** concepts like expansion valves, compressors, evaporators, and condensers in a way that feels intuitive, engaging, and easy to digest.

Explainer Animation Vision

I chose to design this animation around clear conceptual models rather than photorealistic 3D representations. While technical schematics can often feel intimidating and overly dense, stylized 2D and 3D shapes allow viewers to grasp the **fundamental physics** behind pressure and state changes without getting lost in mechanical details. For instance, components like the compressor and expansion valve are represented as clean, **simple** pistons to clearly demonstrate how squishing or **expanding gas** directly alters its temperature.

Instead of overwhelming the audience with industrial machinery, the visual narrative relies on **expressive color language** and fluid motion to depict how **refrigerant transitions** between liquid and gas states. Warm thermal energy is shown physically moving, packing together, and venting out into the atmosphere, making the invisible laws of thermodynamics feel visible and memorable.

Ultimately, the goal is to leave viewers feeling **smart, informed**, and **confident** in their understanding of how thermal energy moves through a closed loop system.

GOAL

The goal of this video is to help viewers understand the physical mechanics of an air conditioning cycle without relying on overly complex industrial diagrams. After watching, we want them to clearly grasp how **heat moves**, how pressure changes affect temperature, and how the **refrigerant changes** states. By keeping the visual language simple and focusing on clear mechanics rather than realistic machinery, the animation makes physics feel accessible, engaging, and effortless to follow.

TARGET AUDIENCE



Maya

"The Casual Skimmer"

Age Range: 18-20

Background & Knowledge:

Basic middle school science background. She knows that turning on the AC makes the room cold, but **assumes the machine literally blows cold air** out of thin air like a freezer.

Media Preferences:

Short-form video, meme culture, fast transitions, and stylized 2D/3D motion design.

She loses interest immediately if a video looks like a school presentation.

Learning Need:

Needs a quick hook and relatable visual metaphors, so the concept clicks before she scrolls away.



Leo

"The Gamified Learner"

Age Range: 18-20

Background & Knowledge:

High interest in gaming, visual tech, and how things work, but **struggles with dry textbook** explanations. He understands basic ideas like pressure, but gets confused when forced to visualize phase changes.

Media Preferences:

Anime UI aesthetics, gaming health bars, dynamic sound effects, and **clean vector graphics with pop culture references** integrated into the backgrounds.

Learning Need:

Responds best to **clear mechanics**, like seeing a simple piston push down to spike temperature, paired with dynamic **color feedback** that instantly shows cause and effect.



Sam

"The Overwhelmed Person"

Age Range: 19-22

Background & Knowledge:

Very minimal prior physics knowledge. Gets easily intimidated by technical jargon like evaporators or condensers and **tunes out** when overwhelmed by **complex diagrams**.

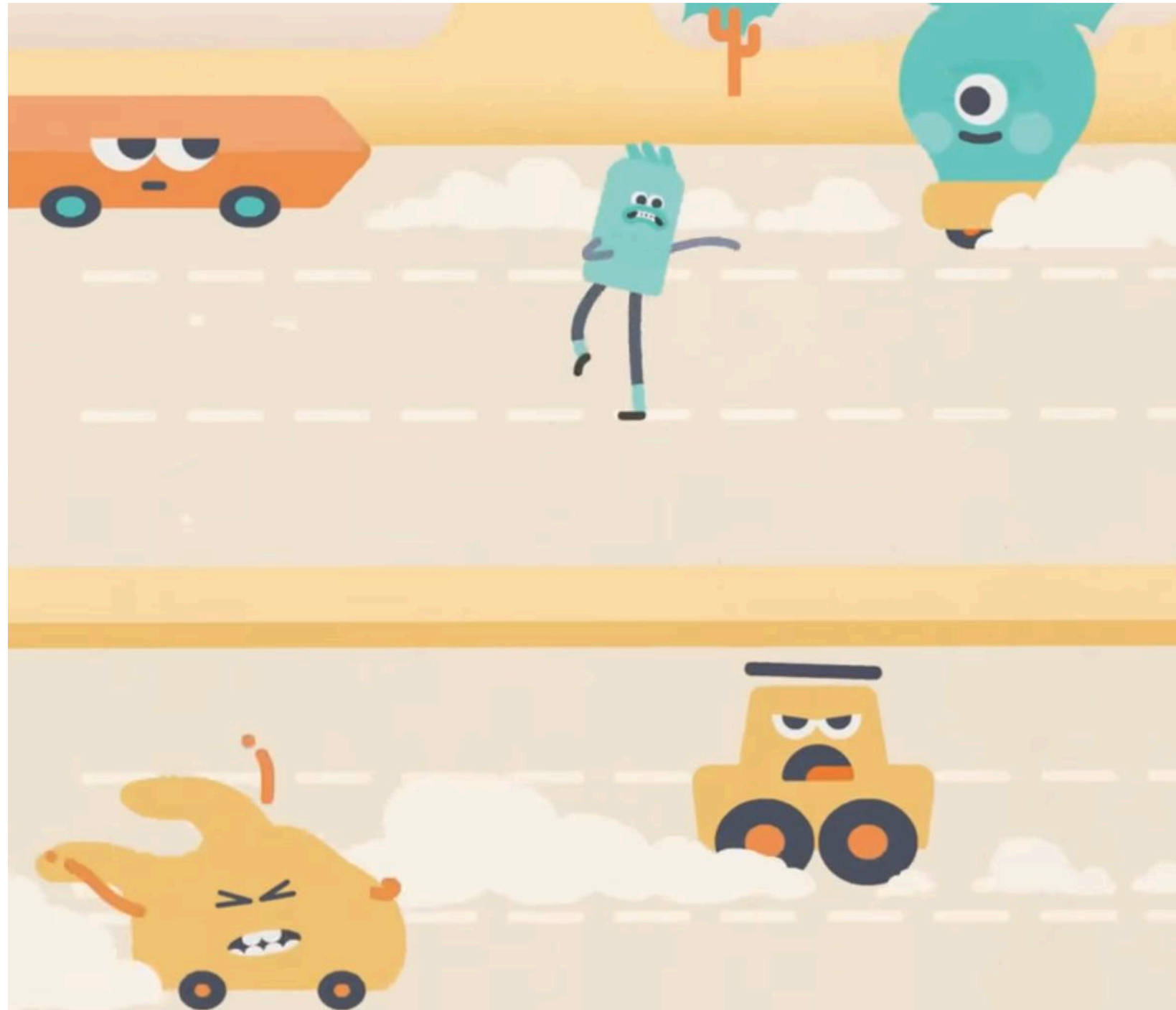
Media Preferences:

Friendly animated explainers, clean motion graphics, **high-contrast color palettes**, and playful character-driven storytelling.

Learning Need:

Needs technical terms introduced only after the visual concept is already clear, ensuring they leave the video feeling accomplished rather than confused.

INSPIRATION 1



https://youtu.be/iN6g2mr0p3Q?si=eI0d-Oy9q4pHz_AI

The art style of Headspace is simple, clean, and visually soothing. Even when illustrating distressing or overwhelming situations, the use of soft colors, rounded shapes, and playful characters makes the content feel light and approachable. This approach aligns perfectly with our goal of converting complex ideas to simple explanations.

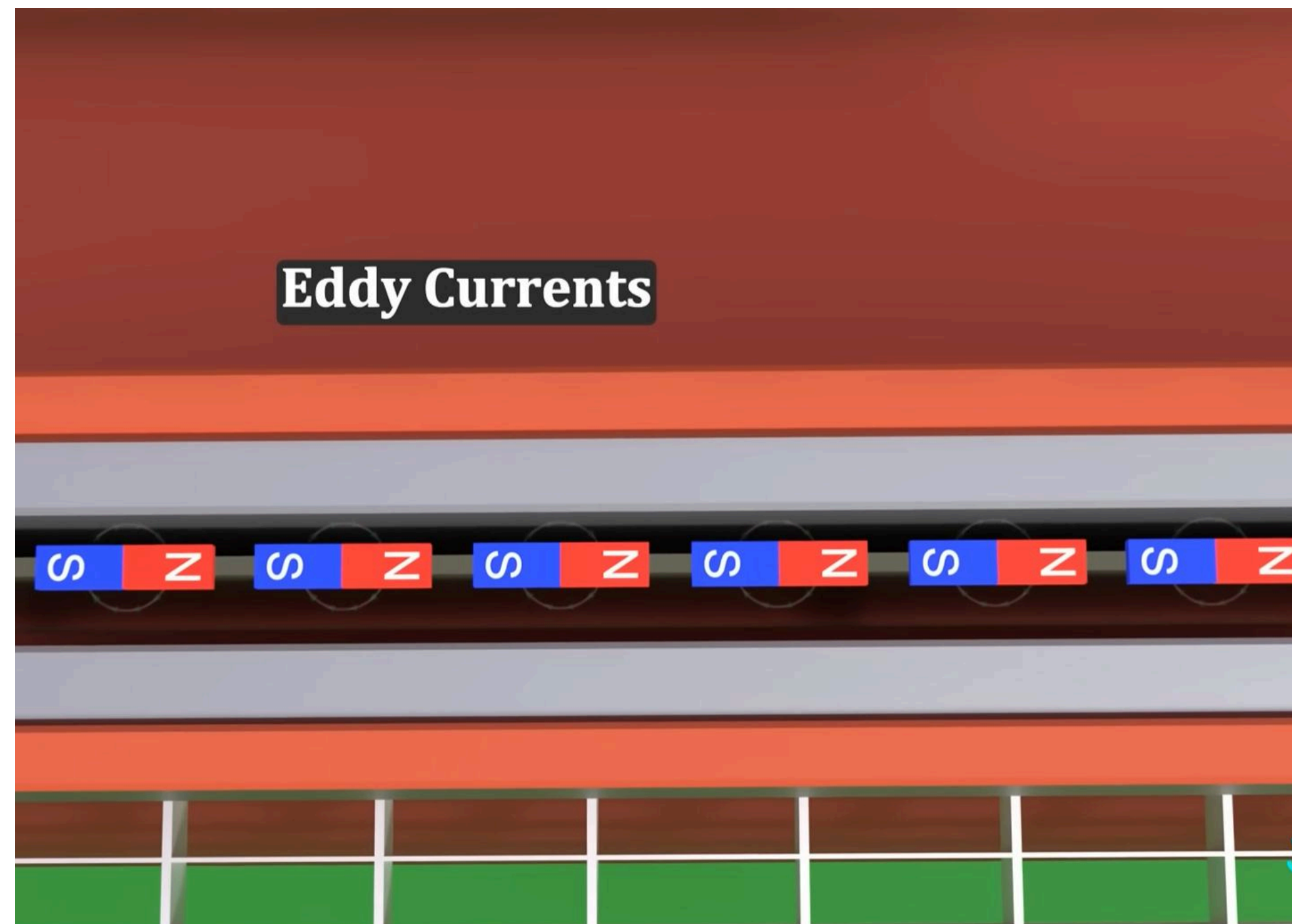
INSPIRATION 2



https://youtu.be/2A1IEBFt6Xg?si=i330bu3J_6d28oH4

Ted-Ed is always my go-to for learning interesting facts: their soothing narration and storytelling approach make complex topics engaging. I might try a similar approach by using wizard references when the word “magic” is said, and the character looks shocked when AC is not operated with “magic”.

INSPIRATION 3



https://youtu.be/irkAtqm-eCs?si=zCZQ0KqXiy40_gHb

The break down of complex machinery by taking viewers on a step-by-step journey rather than showing a complicated setup all at once makes it easier to grasp the knowledge. Rather than using just photorealistic renders, they blend clean, stylized geometric shapes to make invisible concepts like pressure, fluids, gears, etc feel instantly understandable.

VISUAL STYLE

The animation will use a simple, clean graphic art style with a strong focus on **thermal color contrast** to make invisible physics easy to follow. Visuals will feature soft outlines, bold vector shapes, and clean 2D/3D hybrids, keeping mechanical elements abstract rather than photorealistic so viewers stay focused on how heat and energy move.

To clearly show physical changes, the mood and visual temperature will shift dynamically throughout the loop. Chilled things will use blue tones, while heat absorption, compression, and high pressure will expand into vibrant oranges and reds. Fluid particle movements and elastic shape deformations will give the refrigerant liquid and gas states a living, tangible feel.

illustrations I will need:

- **AC unit** → stylized cross-sections of the indoor unit, copper coils, and outdoor condenser box.
- **Compressor & Valve Mechanics** → simplified piston and narrow valve models to explain squishing and expanding gas.
- **Refrigerant Elements** → color-coded particle blobs that shift states and morph as pressure changes.
- **Background Environments** → a minimal home showing indoor room air versus the outdoor environment.
- **Transition Elements** → 3D book

Assets Needed:

Animation Assets

- Motion particle systems for warm room air and chilled airflow.
- Custom shader/blur setups for merging organic refrigerant liquid drops.

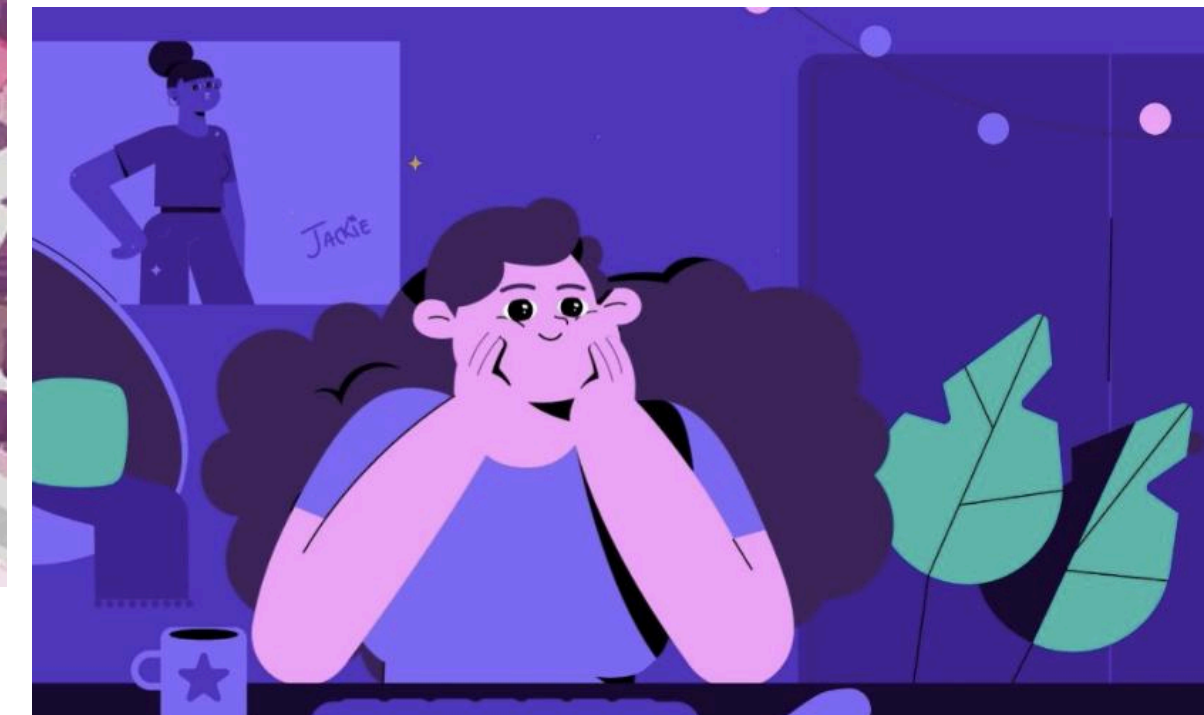
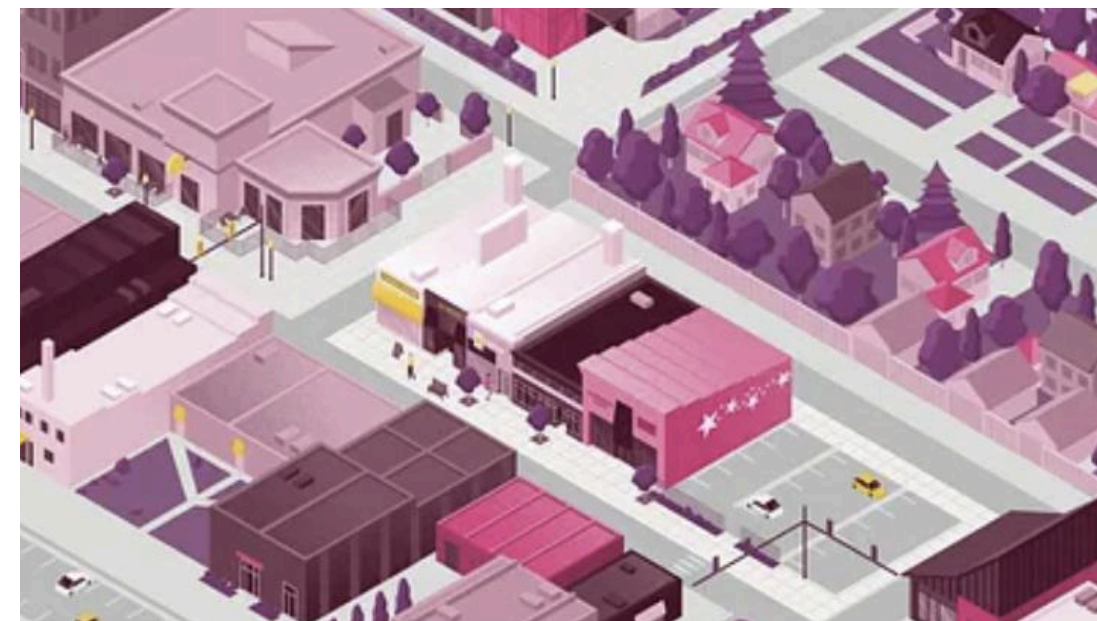
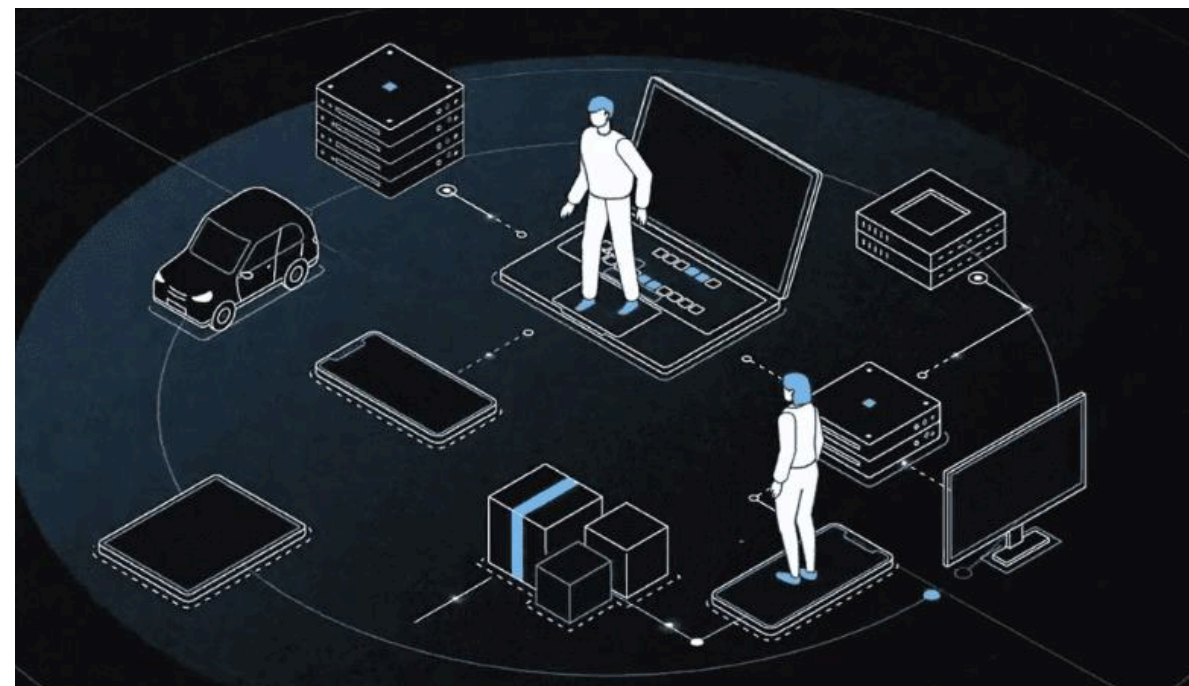
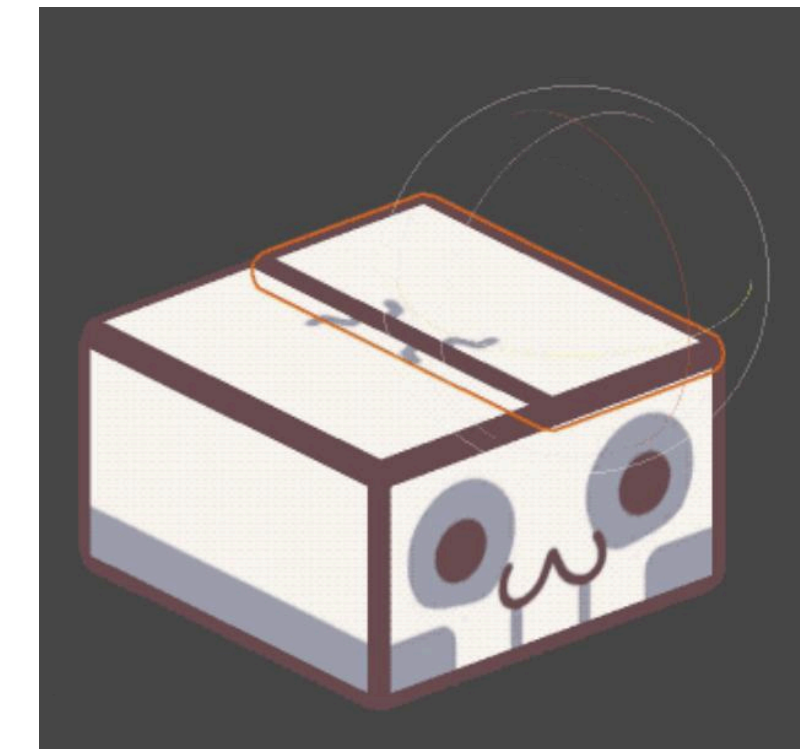
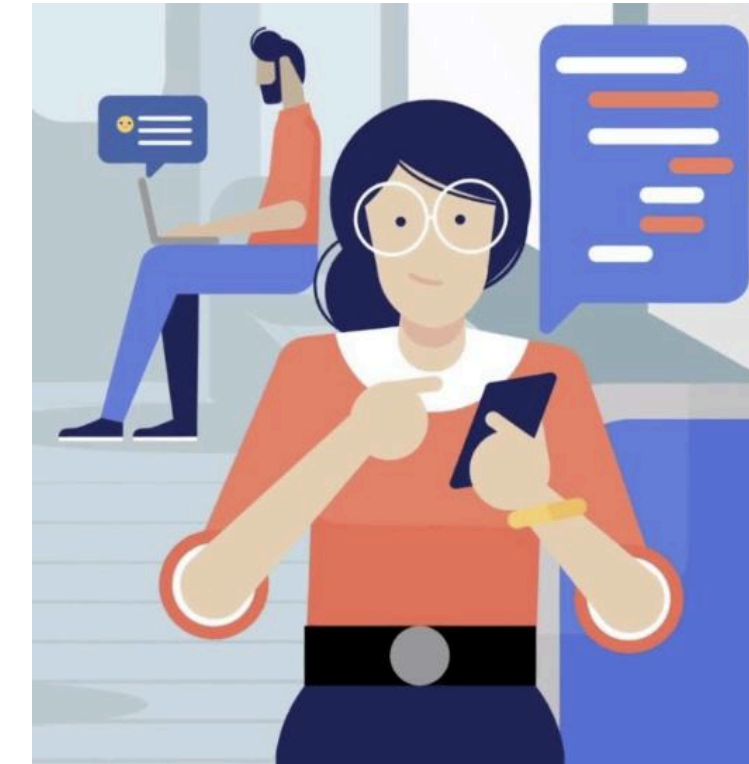
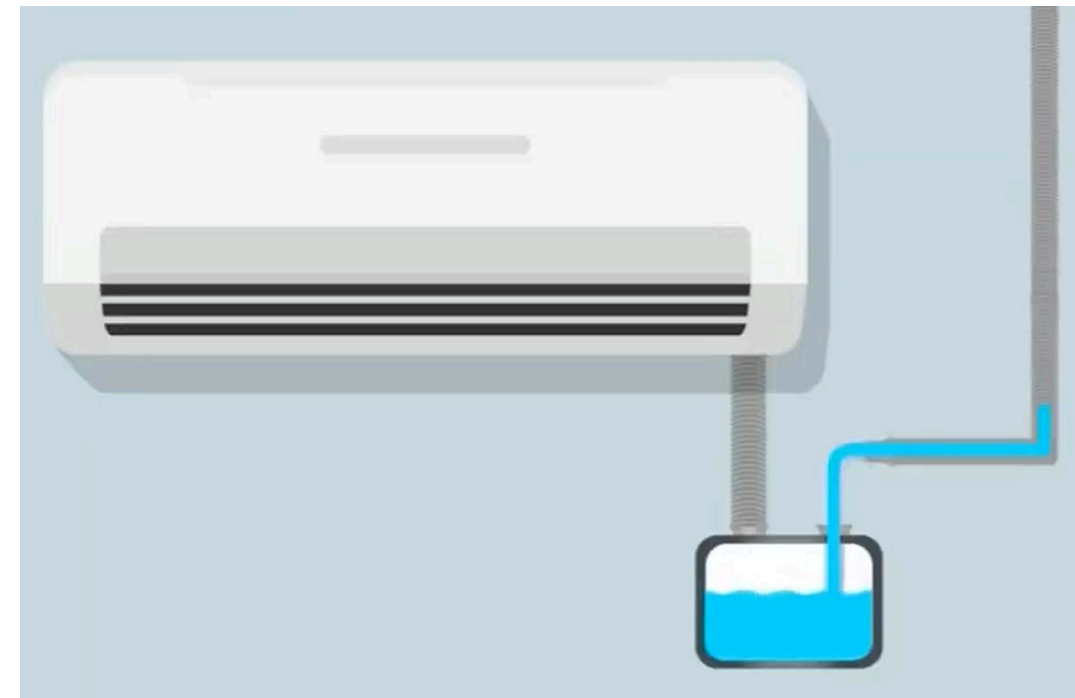
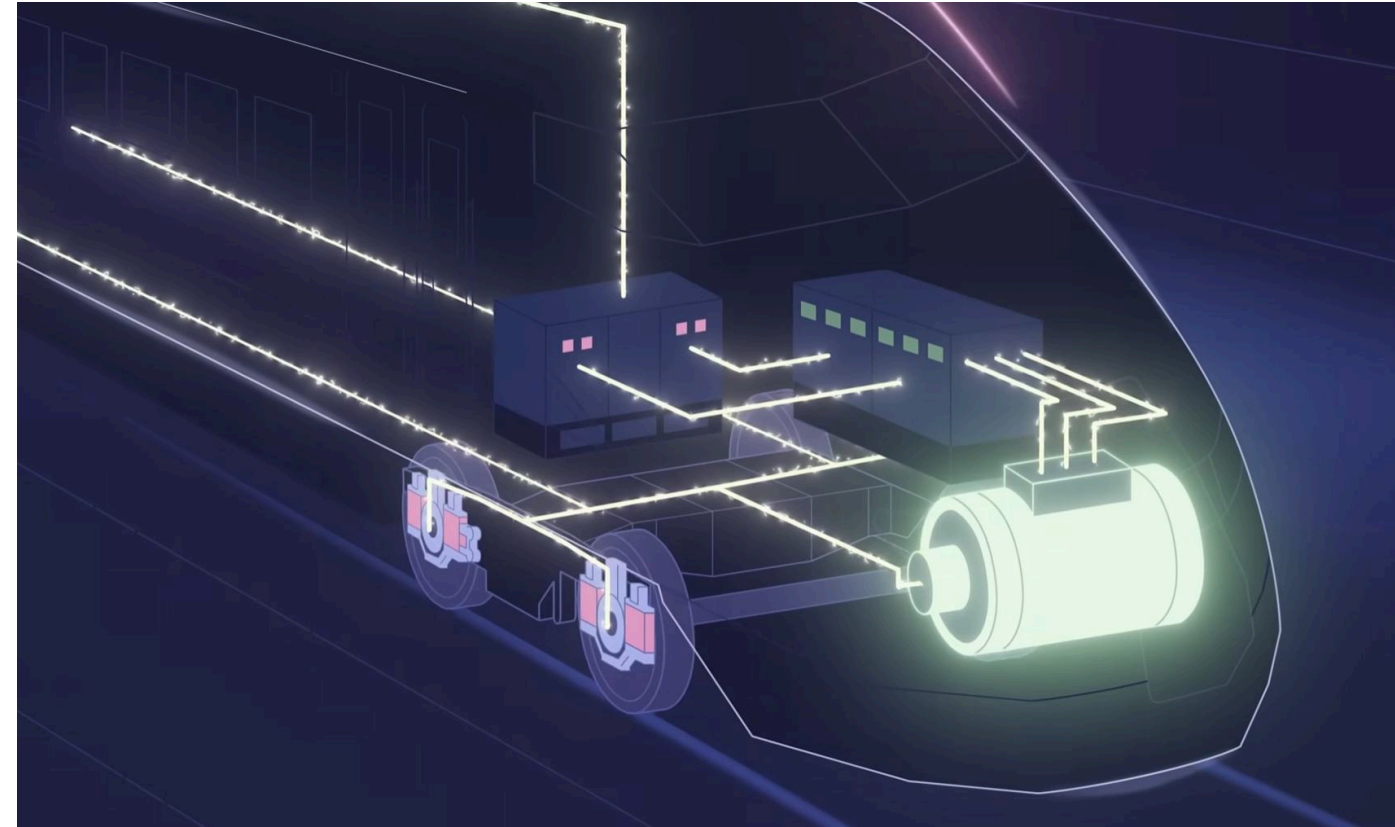
Video References

- 2D/3D hybrid mechanical explainers with smooth camera tracking across pipe loops.

Reference Images for Backgrounds

- Abstract schematic layouts of closed-loop cooling systems.

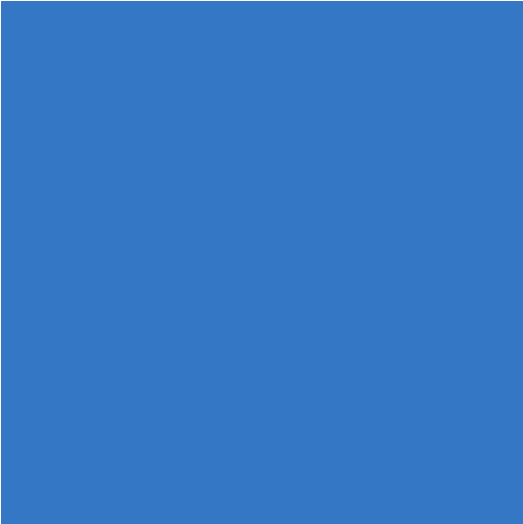
MOODBOARD



The moodboard reflects a modern, clean 2D/3D hybrid style built around abstract geometric models, smooth mechanical movements, and flat vector overlays. It incorporates a restricted color palette of deep neutrals, ice blues, and vibrant warm oranges to communicate temperature shifts clearly without visual clutter. The direction blends isometric spatial layouts with simple UI callouts, keeping the physics mechanics front and center. Finally, the moodboard features simple character design inspirations, showing how stylized, expressive forms can guide the narrative and make complex concepts feel relatable and friendly.

COLORS

Temprature



Cold



Warm

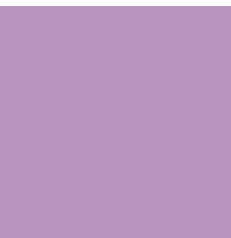


Hot

Environments



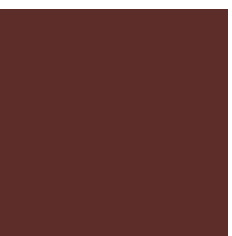
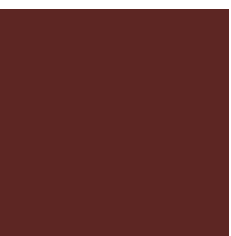
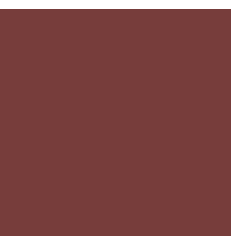
Copper coil



AC



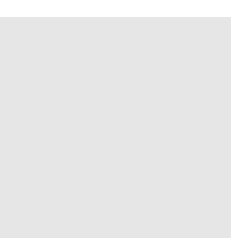
Outdoor greens



Wood



Skin shades



Whites & Greys