

# Process Book



REIMAGINE **EXPO**®

Team Rainbow

Vivian Chen, Yuning Tang, Connie Zhou, Michael Zhu





**Connie**



**Vivian**

Vivian Chen



**Micheal**



**Yuning**



# Role Distribution

## **Vivian Chen**

Ideation | Strategy | LCA | Graphics | CAD | Packaging Design

## **Yuning Tang**

Ideation | LCA | Market Reserch | Packaging Design | Graphics | Process Book

## **Connie Zhou**

Ideation | User Research | User Senarios | UX (App, Web) | Poster Design

## **Micheal Zhu**

Ideation | Strategy | Mock-ups | LCA | Packaging | CAD | Rendering

# Table of Content

Product	5
-Disassembly	6
-Process Tree	12
-LCA	17
Market	20
User	30
Strategy	36
Logo Development	42
Concept Development	45
-General Ideation	46
-3 Concepts	52
Final Design	74
-Expo Pro	75
-Expo Collective	83
-Expo Remote	94
Family Photo	1





PRODUCT



# Expo Dry Erase System Study



**HELPFUL HINTS**

**Expo® dry erase marker maintenance & usage**

1. Expo marker cap should be kept on when not in use to prevent tip from drying out.
2. Always keep markers in a horizontal position. If markings appear light, this may indicate that the marker has been in a tip-up position. Put the marker tip down overnight to restore color and give better erasability.
3. Expo marker tips are likely to be insoluble on porous surfaces.
4. Do not shake markers.

**Dry erase surface maintenance**

1. Use only Expo dry erase markers on your dry erase surface. If a permanent type marker is used inadvertently, clean with Expo Board Doctor™.
2. Clean entire dry erase surface regularly with Expo cleaner. Wipe with soft clean cloth.
3. Do not use any harsh cleaning materials on your board. Abrasive cleaners will cause poor erasability.

**Expo eraser maintenance**

1. Expo eraser should be cleaned by holding it under running water and using a mild dishwashing detergent.
2. Felt chalkboard erasers and paper towels can be abrasive and may damage your dry erase surface.

**CONSEILS PRATIQUES**

**Emploi et entretien du marqueur effaçable à sec Expo®**

1. Bien reboucher le marqueur lorsqu'il n'est pas utilisé pour empêcher la pointe de sécher.
2. Toujours ranger les marqueurs à l'horizontale. Si l'écriture paraît plus claire, cela peut indiquer que le marqueur est resté la pointe en haut. Laissez le marqueur pointe en bas jusqu'au lendemain, pour restaurer la couleur et faciliter l'effacement.
3. L'encre des marqueurs Expo sera probablement indélébile sur les surfaces poreuses.
4. Ne pas secouer les marqueurs.

**Entretien de la surface effaçable à sec**

1. Veillez à ce que les marqueurs effaçables à sec Expo sur vos surfaces effaçables à sec. Si un marqueur de type permanent est utilisé par inadvertance, nettoyez avec Expo Board Doctor™.
2. Nettoyez régulièrement toute la surface à sec avec le nettoyant Expo. Essayez avec un chiffon doux et propre.
3. N'utilisez aucun produit nettoyant pulvérisant sur votre tableau. Les nettoyants abrasifs rendent l'effacement difficile.

**Entretien de la brosse à effacer Expo**

1. La brosse à effacer Expo doit être nettoyée en la tenant sous l'eau courante et en utilisant un détergent doux pour la vaisselle.
2. Les brosses à effacer en feutre et les essuie-tout peuvent être abrasifs et susceptibles d'abîmer votre surface effaçable à sec.

**CONSEJOS ÚTILES**

**Mantenimiento y uso del marcador de borrado en seco Expo®**

1. Mantenga el marcador tapado cuando no lo esté usando para evitar que la punta se seque.
2. Siempre mantenga el marcador en posición horizontal. Si los trazos aparecen claros, esto podría indicar que el marcador ha estado con la punta hacia arriba. Coloque el marcador con la punta hacia abajo durante la noche para restaurar el color y que el borrado sea más fácil.
3. Es probable que la tinta del marcador Expo sea indelible sobre superficies porosas.
4. No agite los marcadores.

**Mantenimiento de la superficie de borrado en seco**

1. Use solamente los marcadores de borrado en seco Expo sobre la superficie de borrado en seco. Si se usa un marcador de tipo permanente de forma inadvertida, limpie con Expo Board Doctor™.
2. Limpie por completo la superficie de borrado en seco regularmente con el limpiador Expo. Limpie con un paño suave y limpio.
3. No utilice materiales de limpieza ásperos sobre el tablero. Los limpiadores abrasivos causarán un borrado deficiente.

**Mantenimiento del borrador Expo**

1. El borrador Expo debe lavarse sosteniéndolo bajo el agua corriente y usando un detergente de lavavajillas suave.
2. Los borradores de fieltro para pizarras de tiza y las toallas de papel pueden ser elementos abrasivos y podrían dañar la superficie de borrado en seco.

**IMPORTANT: Turn over before opening • IMPORTANT: Retourner avant d'ouvrir**  
**IMPORTANTE: Déle la vuelta antes de abrirlo**

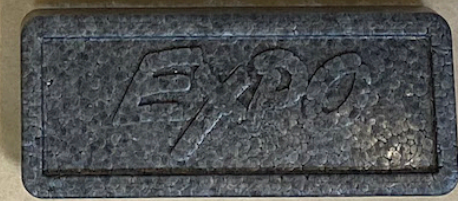
**EXPO** dry erase system  
système d'effacement à sec  
sistema de borrado en seco

low odor • encre peu odorante • tinta de bajo olor

- Keeps supplies neat and organized  
• Travels or stores anywhere
- Garde les fournitures nettes et bien organisées  
• Se transporte et se range n'importe où
- Mantiene los materiales limpios y organizados  
• Puede llevarse o guardarse dondequiera

15 pieces kit includes:  
Ensemble de 15 pièces contient:  
El sistema de 15 productos incluye:

- 8 Clean Tip Pointe en Tête Punta de Cera
- 4 Fine Tip Pointe Fine Punta Fina
- 1 Cleaner Produit de nettoyage Limpador Expo
- 1 Eraser Brosse Expo Borrador Expo
- 1 Convenient carrying case Etui pratique Cómodo estuche



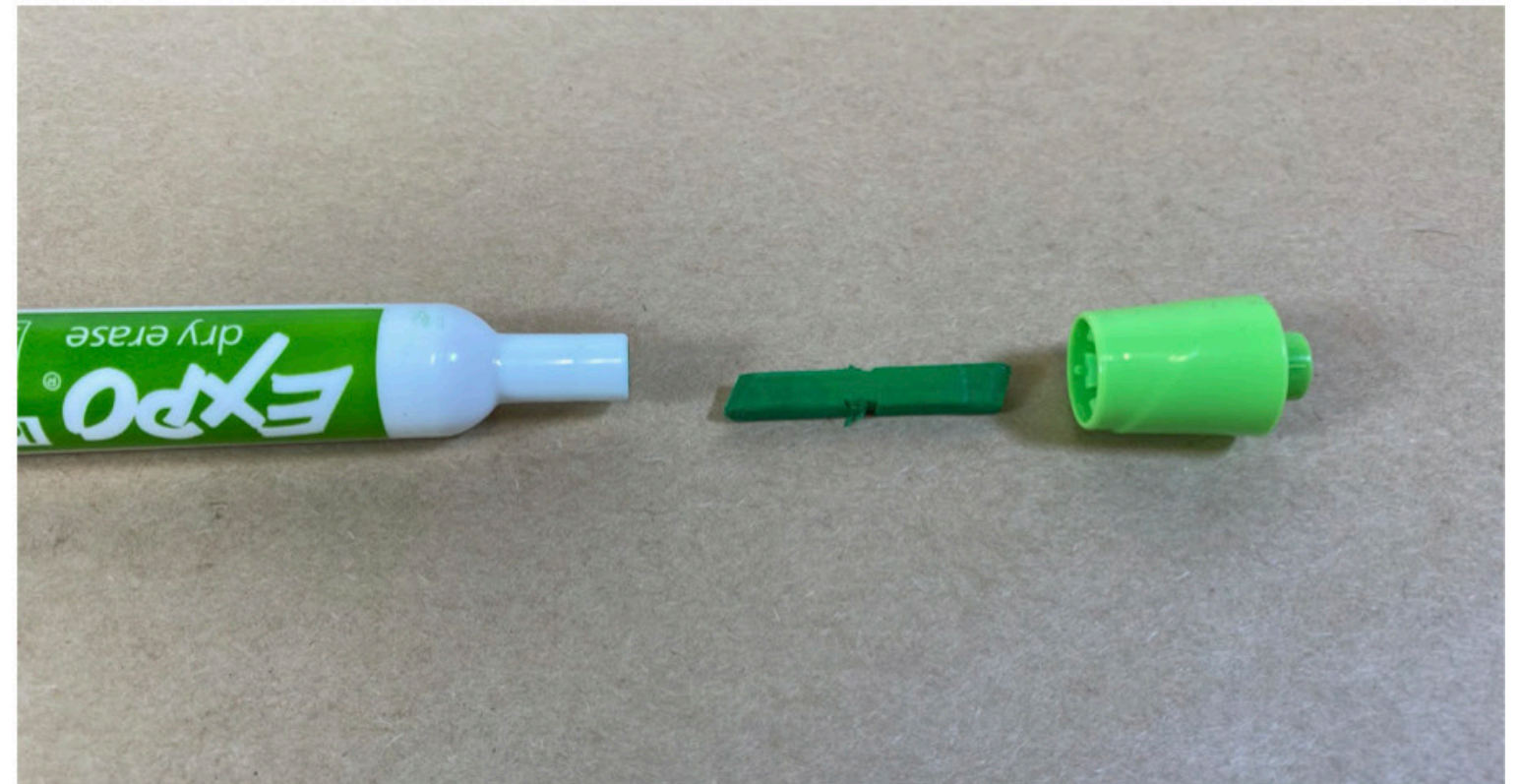


# Disassembly Packaging



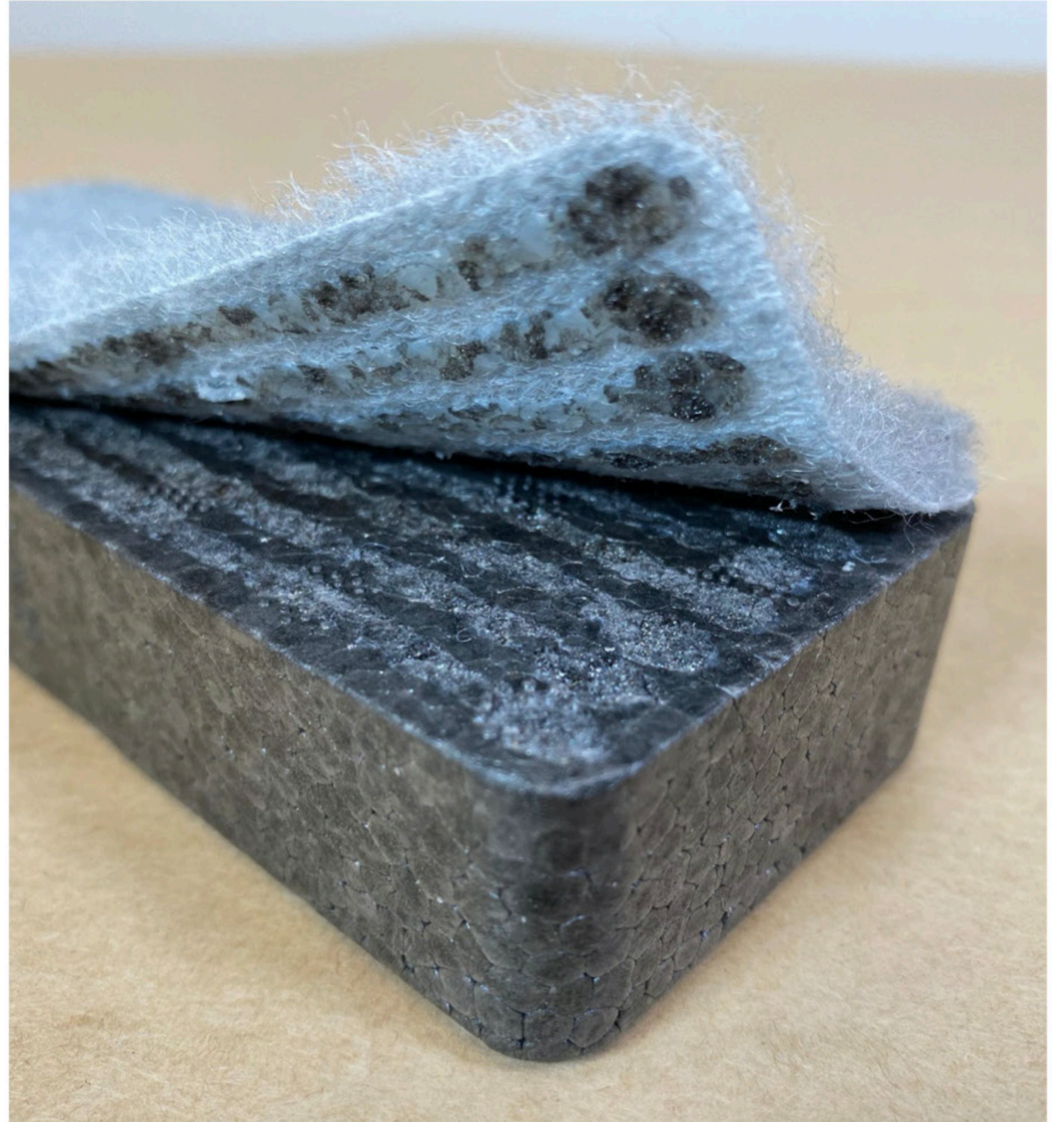


# Disassembly Markers



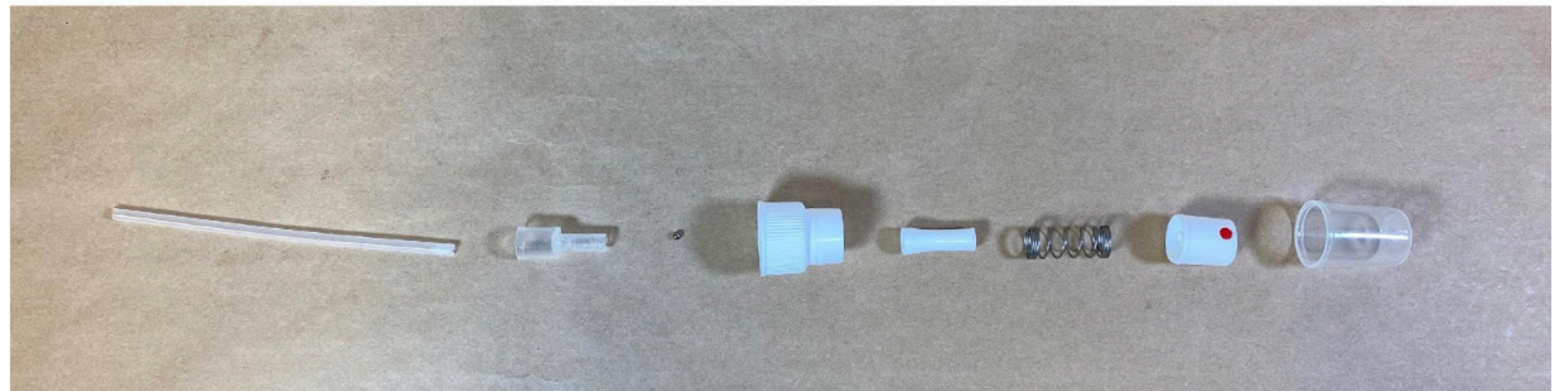


# Disassembly Eraser





# Disassembly Cleaner





# Bill of Materials

	NO.	Component	Material	Qty.	Weight/g	Weight/lbs.	IFP	Total
Packaging	1	Paper cover	Cardstock	1	49	0.1078	1.68	0.181104
	2	Blister Cover	PVC	1	45	0.099	10.37	1.02663
	3	Cardboard insert	Cardboard	3	175	0.385	1.96	0.7546
	4	Blister	PVC	1	104	0.2288	10.37	2.372656
Chisel*8	5	Cap	PP	1	7	0.0154	3.29	0.405328
	6	Barrel	PP	1				
	7	End Plug	PP	1				
	8	Nib	PS fiber + PU resin	1	5	0.011	3.62	0.31856
	9	Reservoir	PP wrap + PS fiber	1	8	0.0176	2.87	0.404096
	10	Ink			5.6	0.01232		0
Fine*4	11	Cap	PP	1	5	0.011	3.29	0.14476
	12	Barrel	PP	1				
	13	End Plug	PP	1				
	14	Nib	PS fiber + PU resin	1	2	0.0044	3.2	0.05632
	15	Reservoir	PP wrap + PS fiber	1				
	16	Ink			5.6			0
Eraser	17	Foam	Styrofoam	1	5	0.011	3.54	0.03894
	18	Felt	PS fiber	1	4	0.0088	1.22	0.010736
Cleaner	20	Bottle	HDPE	1	24	0.0528	3.25	0.1716
	21	Cap	PP	1	2	0.0044	3.29	0.014476
	22	Tube	PP	1	2	0.0044	3.29	0.014476
	23	Coupler	PP	1				
	24	Ball	Steel	1	2	0.0044	14.58	0.064152
	25	Spring	Steel	1				
	26	Case	PP	1	6	0.0132	3.29	0.043428
	27	Connector	PP	1				
	28	Nozzle	PP	1				
	29	Liquid			235	0.517		0

**Okala Score:  
6.02/720 hrs.\***

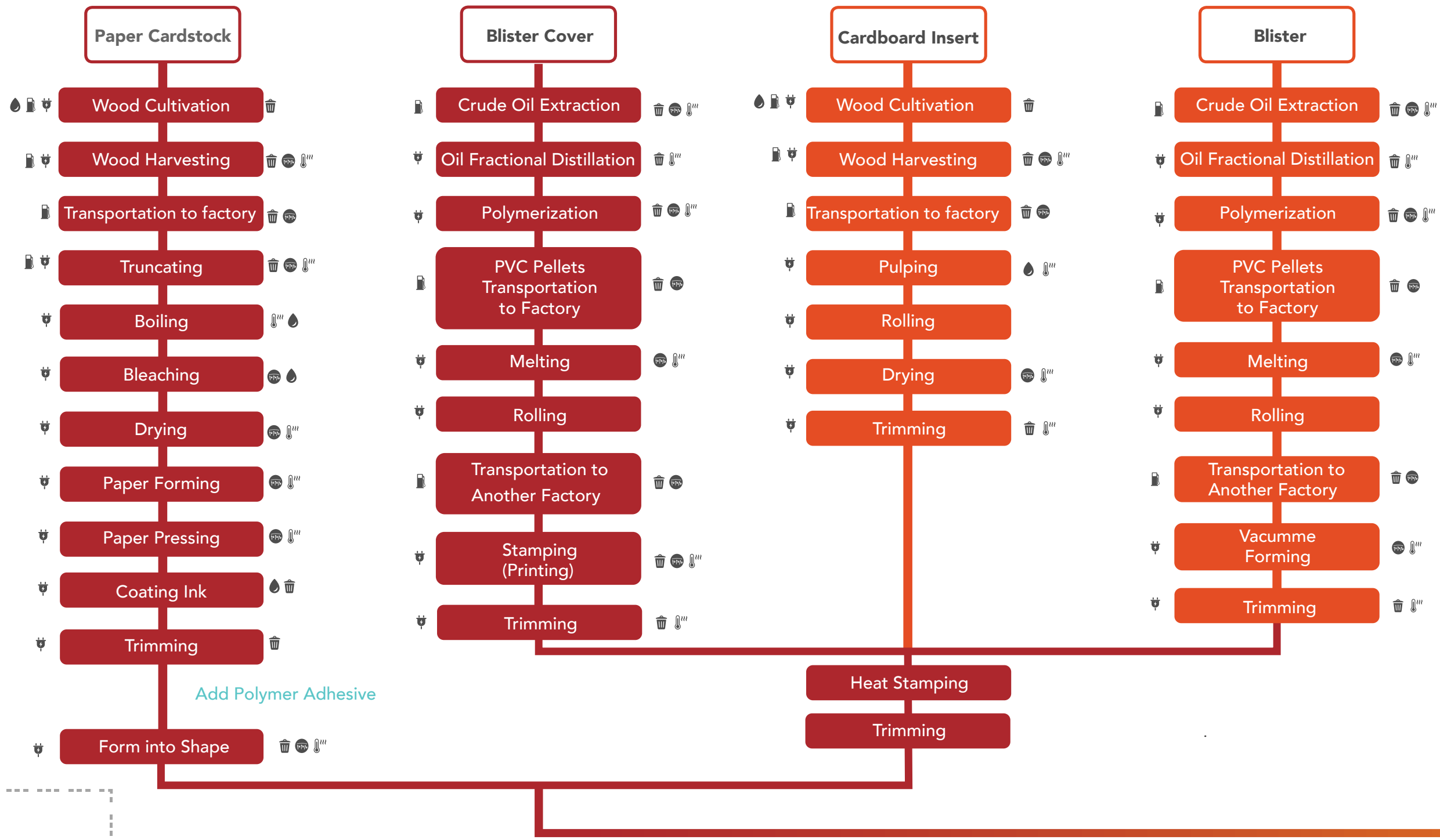
\* 3(hrs) x 5(days) x 4(wks) x 12(pens)

# Process Tree





**Package**



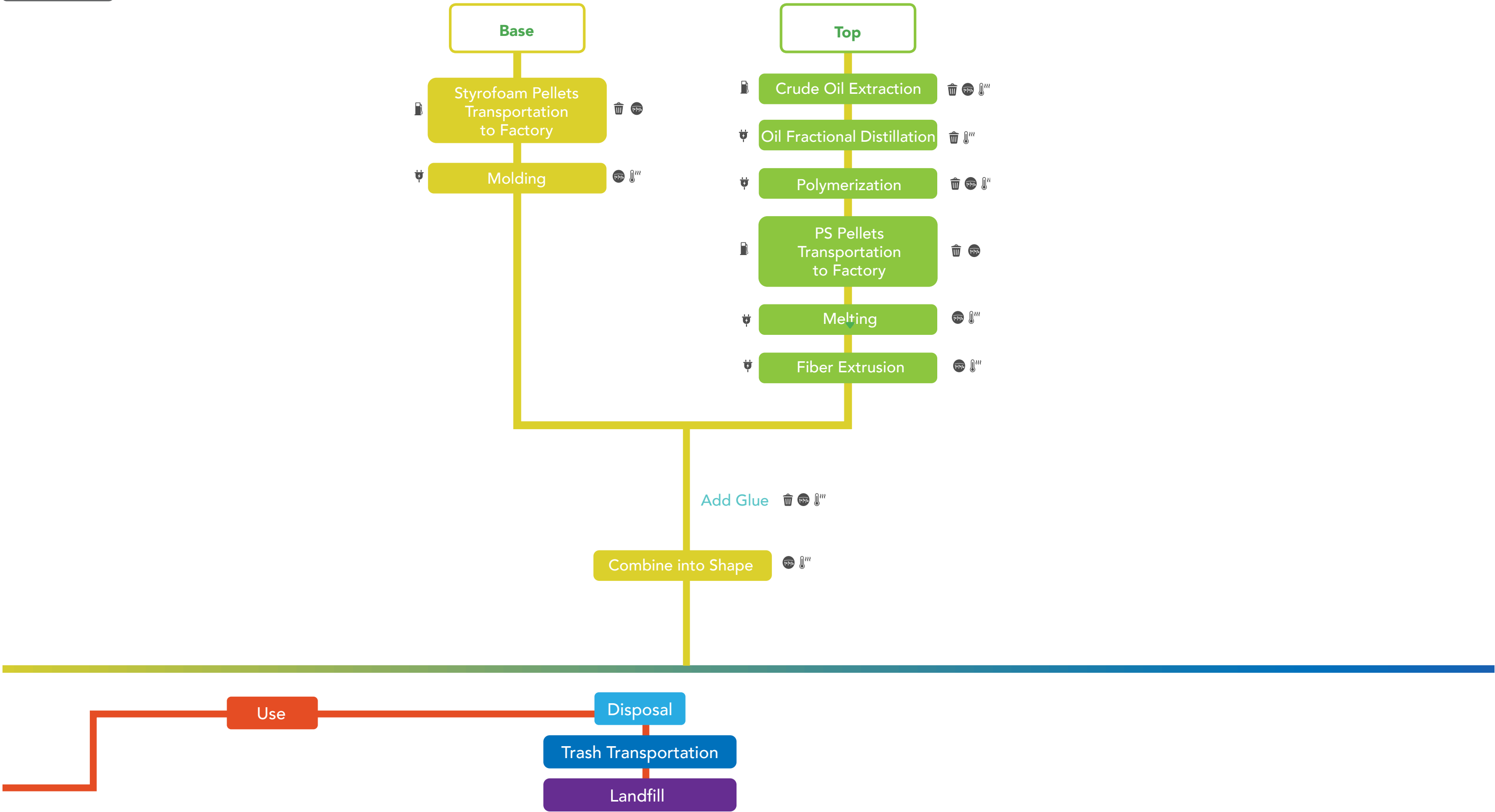
Water  
 Fossil Fuel  
 Electricity  
 Trash  
 Greenhouse Gas  
 Heat

Marker  
Chisel & Fine Tip





Eraser



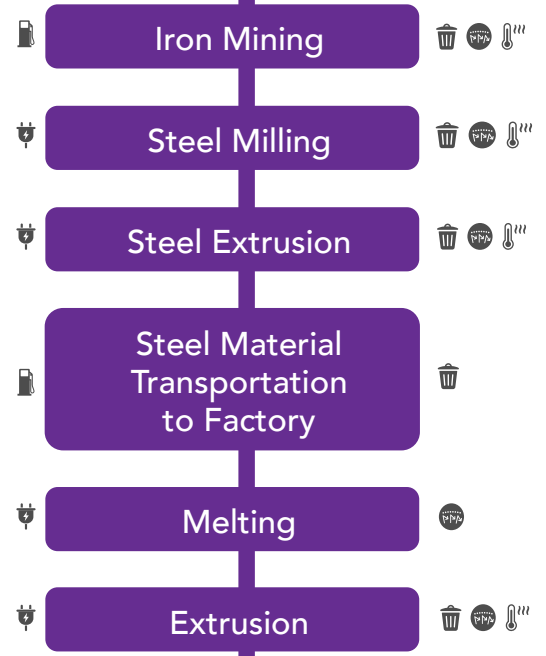
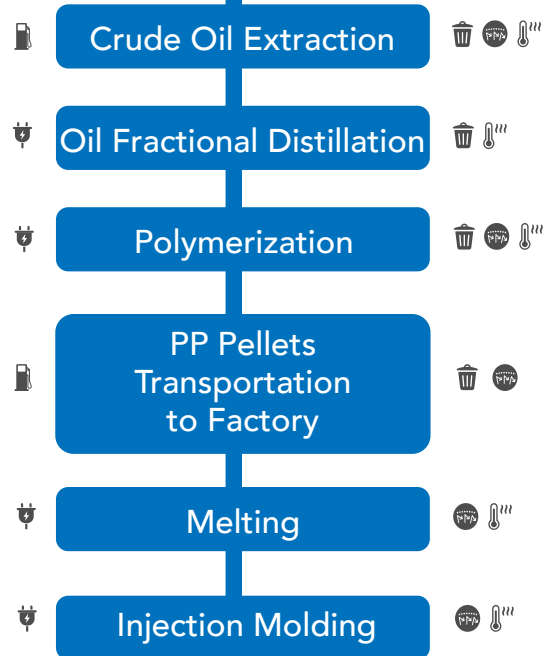
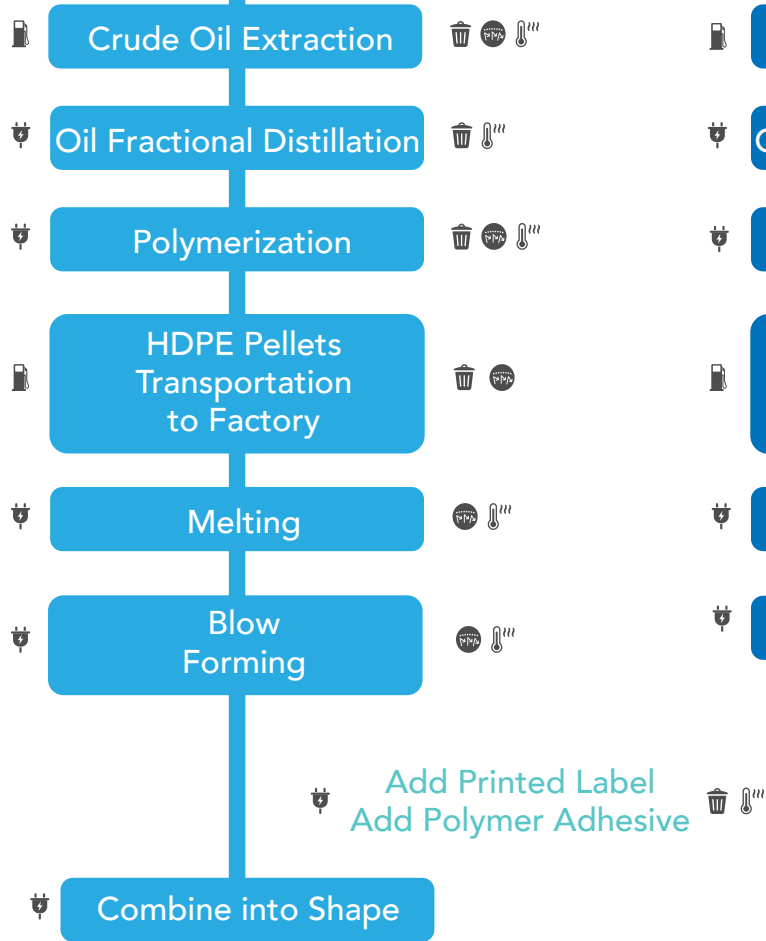
Cleaner

Liquid

Container

Plastic Components

Metal Components




# Inventory Matrix

	Material Input	Energy Use	Waste & Emissions
Raw Material Extraction	Wood Plants Fertilizers Oil	Water Gas Electricity	CO2 Emissions Soil Contamination Waste Chemicals
Material Processing	Water Gas	Electricity Fossil Fuel	CO2 Emissions Waste Chemicals
Component Manufacturing	Dye Water	Electricity	CO2 Emissions Waste Chemicals
Assembly & Packaging	Ink Adhesive Paper	Electricity	Packaging cutoff
Distribution & Purchase	Ink Adhesive Paper	Electricity Fossil Fuel	CO2 Emissions
Installation & Use	/	/	/
Cycling: Reuse	/	/	/
Cycling: Recycling	/	/	/
Cycling: Disposal	All Components	Fossil Fuel	Waste Landfill




# Impact Matrix


	Resource Depletion	Global Warming	Ozone Layer Depletion	Acid Rain	Land Degradation	Water Pollution	Air Pollution	Reduced Biodiversity	Positive Impact	Little Impact	Negative Impact
Raw Material Extraction	Red	Red	Yellow	Red	Red	Yellow	Yellow	Yellow			
Material Processing	Yellow	Red	Red	Red	Yellow	Yellow	Red	Red			
Component Manufacturing	Yellow	Red	Yellow	Red	Yellow	Red	Red	Yellow			
Assembly & Packaging	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow			
Distribution & Purchase	Red	Red	Yellow	Red	Yellow	Yellow	Red	Yellow			
Installation & Use	Green	Green	Green	Green	Green	Green	Green	Green			
Maintenance & Upgrading	Green	Green	Green	Green	Green	Green	Green	Green			
Cycle: reuse (product/ components)	Red	Yellow	Yellow	Red	Red	Red	Red	Red			
Cycle: reuse (materials)	Red	Yellow	Yellow	Red	Red	Red	Red	Red			
Cycle: reuse (incineration/ landfill)	Red	Yellow	Yellow	Red	Red	Red	Red	Red			



Positive Impact



Little Impact



Negative Impact



# Summary

## **The current life cycle of the products is not sustainable**

Product goes to landfill directly, not a close loop

Materials are not easily recycled

Some materials are commingled

Materials are contaminated by ink

Complicated manufacturing and transporting process





MARKET



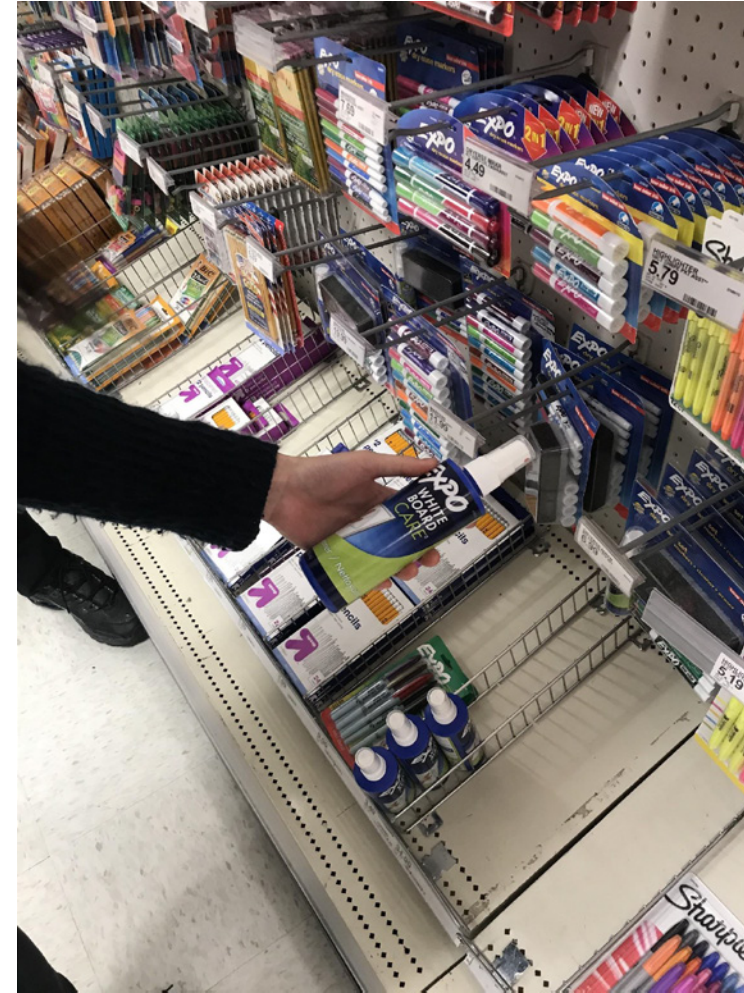
# Retail Store Visit



Dedicated End Cup



Major Display Area



Cleaner Sold Separately



Smaller Package





## Editorial recommendations

By [TechnoBuffalo](#) | [Onsite Associates Program](#)

### Best Dry-Erase Marker Sets

Dec 20, 2019 - 8 Recommendations

Today, whiteboards are a staple in any setup that needs written illustration or frequent brainstorming. And you are going to need some good dry erase markers to help you map out your plan or drive that point home. Dry erase markers come in small or large sets and different tip sizes. We've done the legwork and put together the best dry-erase marker sets, go ahead and grab your favorite.

[Read full article](#)

#### Ultra-fine Staff Pick



EXPO 1884309 Low-Odor Dry Erase Markers, Ultra Fine Tip, Assorted...

★★★★☆ ~ 3,306

\$9<sup>48</sup> ~~\$14.25~~

You will enjoy steady and accurate writing with the EXPO dry erase markers. Their ultra-fine tip works best on an impermeable surface like whiteboards,...

#### Value Pack



ARTEZA Dry Erase Markers, Bulk Pack of 52 (with Chisel Tip), 12...

★★★★☆ ~ 873

\$27<sup>99</sup>

Save 20% with coupon

Save 10% more with Subscribe & Save

With a Japanese chisel tip, the ARTEZA dry-erase markers will enable you to draw both thick and slim lines. It comes in a pack of 52 markers in 12 bold colors th...

#### Flexible Writing



AmazonBasics Dry Erase White Board Markers - Low Odor, Chisel...

★★★★☆ ~ 2,238

\$7<sup>49</sup>

Save more with Subscribe & Save

Art lovers will appreciate the different colors available in the AmazonBasics low-odor dry erase marker sets. They come in a 12 pack and have a handy chisel tip to...

#### Vivid and vibrant colors



Expo Dry Erase Markers Chisel Tip Vibrant Colors 8 Pack 1931196 Lo...

★★★★☆ ~ 153

\$9<sup>78</sup>


Designed with alcohol based-low odor ink, the Expo dry erase chisel tip markers are ideal for glass, whiteboards, and many impermeable surfaces. They have bold c...



# Consumer Review

## EXPO markers with eraser: 4.5 of 5

Office Products > Office & School Supplies > Writing & Correction Supplies > Markers & Highlighters > Dry Erase & Wet Erase Markers



EXPO Dry Erase Marker Starter Set, Chisel Tip, Assorted Colors, 6 Piece  
by EXPO  
★★★★☆ 4,586 ratings | 44 answered questions  
Amazon's Choice for "dry erase markers with eraser"

List Price: \$10.49  
Price: **\$6.88** & **FREE Shipping** on orders over \$25.00 shipped by Amazon. Details  
You Save: **\$3.61 (34%)**

Get \$60 off instantly: Pay \$0.00 upon approval of the Amazon.com Store Card.

**Note:** Available at a lower price from other sellers that may not offer free Prime shipping.

Size: **4-Ct with Cleaner + Eraser**

3-Ct with Magnetic Eraser Clip  **4-Ct with Cleaner + Eraser**

4-Ct with Eraser  5-Ct with Cleaner + Eraser  6-Ct with Eraser

12-Ct with Cleaner + Eraser

Style: **Chisel**

**Chisel**  Fine  Ultra Fine  Chisel + fine

Product Packaging: **Standard Packaging**

- Kit comes with everything you need to get started marking
- Consistent, skip-free writing, vibrant color options and low-odor ink make the kit perfect for classrooms and offices
- Spray and EXPO eraser help you erase cleanly and easily
- Versatile chisel tip allows for broad or fine writing
- 6-piece set includes: Red, Blue, Green and Black dry erase markers, a 2oz bottle of Expo white board cleaning spray and an Expo eraser

Compare with similar items

New & Used (44) from **\$4.39** & **FREE Shipping** on orders over \$25.00

[Report incorrect product information.](#)

Roll over image to zoom in

### Pros:

- Vibrant color
- Easy to use
- Cheap

### Cons:

- Dry out
- Nib split/fall off
- Not durable



# Current Brand Image



Colorful



Affordable



High quality



Disposable





# Market Trend



## THE NEW PLASTICS ECONOMY GLOBAL COMMITMENT 2019 PROGRESS REPORT SUMMARY

A.I.S.E., International Association for Soaps, Detergents and Maintenance Products + actiam + Adlon Dominican Sisters Portfolio Advisory Board + ASCOC + Asaka Institute of Circular Engineering and Economy + AGPM (Association of the Greek Manufacturers of Packaging & Materials) + Ahold Delhaize + ALBEA + Algramo + ALPLA Werke Alwin Lehner GmbH & Co KG + Althelia Sustainable Ocean Fund + Amcor + American Litorica Company + ANIPAC + APK AG + APLM + Portuguese Marine Litter Association + ApariGroup Inc + Aquapak Polymers Limited + Arca Continental + Archemix Ltd + Arup + As You Sow + Asia Pacific Waste Consultants (APWC) + Asociación Chilena para el Fomento de la Economía del Bien Común (EBC) + Asociación Nacional de la Industria Química A.C. (ANIQ) + Associação para as Ciências do Mar - APCM + Atalay Abasi + Avepa + Bangor University + Barilla G. & R. Fratelli SPA + Baum und Ptergarten + Bell Holding + Bala-Frank + Birksley Center for Green Chemistry + Berry Global + bioMASON, Inc. + Biopac UK Ltd + Biopak Pty Ltd + Bioproducts Discovery and Development Centre (BDDC), University of Guelph, Ontario, Canada + BMO Global Asset Management + BNP Paribas Asset Management + Boomer + Borealis AG + Boston Common Asset Management + Brightplus Oy + Brunel Pension Partnership Ltd + Burberry Group plc + Burberry Material Futures Research Group from the Royal College of Art + Business in the Community + C4D Cities Climate Leadership Group + Cabot Corporation + Californians Against Waste + Calouste Gulbenkian Foundation + CAPTURE + CarbonLite Recycling + Carrefour + CBPAK Tecnologia S/A + Cado + CELEX + CEMPRE Colombia + Consorcio Empresarial para el Reciclaje + China Plastic Recycling Association of China Resource Recycling Association + China Plastics Reuse and Recycling Association + Circular Economy Initiative at KTH Royal Institute of Technology (CE@KTH) + Circular Economy Innovation Centre - USP + CIRCULAR ECONOMY JAPAN + Circular Economy Leadership Coalition + Circular Sweden + Circularity Capital LLP + Circulo Verde + City of Austin + Clarmondal + Cleaning and Hygiene Suppliers Association + Closed Loop Partners + Coast Impact Fund + Coca-Cola FEMSA + Colgate-Palmolive Company + College of Design and Innovation, Tongji University + Commonsense + Congregation of St. Joseph + Constantia Flexibles + Core Capital Management LLC + Corn Refiners Association + Creolus + CSSA (Canadian Stewardship Services Alliance Inc.) + Cumaplot BV + CupClub Limited + Custompak Plastic Products 1997 Ltd + Danone S.A. + Daughters of Charity, Province of St. Louise + Delphis Eco + Department of Economics and Management - Departamento de Ciências Económicas e Azienda, University of Pavía + Detpak + Diego + Digimarc Corporation + Dignity Health + Dr. Girma Zawdie + Dr. Alysia Garmuliewicz, Professor, Universidad de Santiago de Chile + Dr. Carson Meredith + Dragon Rouge Limited + Dynapack Asia + Earthwatch Institute + Earthwise Group + ECOGESTUS, Waste Management Ltd + Ecolibria Reciclados Ibericos SA + ECOPIXEL + Ecopod + ecostore + Ecosurety + Environment Global Facilities + Elemental Impact + ELISAVA Barcelona School of Design and Engineering + Encorp ENSEL Austria GmbH + Envasas Universales de México + Enviro Pride + Environment Department, Ministry of Energy and Climate Change, Republic of Seychelles + EPRO European Plastics Recycling and Recovery Organisation + S&S Simão Lda. + ESG Portfolio Management + Essity AB + Etica Sgr + Responsible Investments + European Investment Bank + European Recycling Industries' Confederation (EURIC) + EXCELRISE + Excess Materials Exchange + Exchange 4 Change Brazil + Faculty of Management, Law and Social Sciences, University of Bradford + Ferrero + Fifth Season Ventures + Flex Film International BV + Flexible Packaging Europe + Food & Consumer Products of Canada + FoodDrinkEurope + Footprints Africa + FORWARD One Venture Capital for Hardware + Foundation Recycal + FrieslandCampina Nederland BV + Full Cycle Bioplastics + Fundación Latinoamérica Verde + Futamura Group + GANNI + gDiapers + Generalitat de Catalunya + Gobierno de la Ciudad de Buenos Aires + Government of Chile + Government of Grenada + Government of Rwanda + Graham Packaging Company + Grant Design + Greco + Guerrero + GreenBiz Group Inc. + GreenBlue and the Sustainable Packaging Coalition (SPC) + Greiner AG + GRID-Arendal + GW&K Investment Management + H. Ayuntamiento de Toluca + H&M Group + Henkel AG & Co. KGaA + Hera Group + Hermes EOS + Hi-Cone + High Speed Sustainable Manufacturing Institute (HSSMI) + HP Inc. + Husky Injection Molding Systems Ltd. + INCOM RECYCLE Co., Ltd. Beijing + Inditex + Indonesian Waste Platform + Indorama Ventures Public Company Limited + Indústria Mexicana de Reciclação S.A. de CV + ING + INGROUP + Innocent drinks + Insper Instituto de Ensino e Pesquisa + Institut für Kunststofftechnik + Institute for Integrated Quality Design (IQD), Johannes Kepler University Linz (JKU) + Institute of Development Studies + Institute of Technology Tralee + Instituto Italiano di Tecnologia + International Solid Waste Association + ISWA + International Union for Conservation of Nature (IUCN) + Internet Fusion Group + IWC Schaffhausen + IWrc + Jabil Packaging Solutions + JAMES CROPPER PLC + Jan Ravenstijn Biomaterials Consulting + Jane Pentz + JAVA MOUNTAIN COFFEE + Johnson and Johnson Consumer + Kapad Kach Patra Kasthakaranchayal + Keep Scotland Beautiful + KEEP SWEDEN TIDY + Kellogg Company + Kempen Capital Management + Keko + Keurig Dr Pepper + Kiara S. Winans + Kiduara + Kingfa Sci. & Tech. Co., Ltd. + Kmart Australia Limited + Koopata Packaging Ltd. + L'Oréal + L'OCITANE en General Investment Management + Life Cycle Initiative + LIPOR - Intermunicipal Waste Management of Greater Porto, Portugal + LLLUK + London Waste and Recycling Board + Loop + Loop Circular Economy Platform Ltd + Loop Industries + LPP + Man Group + MARE + Marine and Environmental + Material Economics + Material Economics + Matira APA (UK) Ltd. + McDonough Innovation + Melco Resorts & Entertainment + MERA - The Association for Sustainable Manufacturing + Mercy Investment Services, Inc. + METRO AG + Ministry for the Environment New Zealand + Ministry of Environment and Energy Transition - Portugal + Ministry of the Environment (Peru) + Ministry of the Environment - Environmental Solutions Initiative + MIWA (Minimum Waste) + Mobile + mobius + Molson Coors Brewing Company + Mondi + Monterey Bay Aquarium + Mr. Green Africa + Cosmetic Cases + National Geographic Partners, LLC + National Recycling Coalition + NATURA COSMETICS + Nature's Path Foods + NatureWorks + Nestlé + Netherlands Institute for + Noble Environmental Technologies Europe BV + NorthEdge Capital + Noxpla Limited + Nova School of Business and Economics + Novamont SpA + NOVAPEL + Nuceria Group + Ocean Oceanographic Institute, Prince Albert I of Monaco Foundation + Okena Servicios Ambientales + Oliver Wyman + One Water + Openbare Vlaamse Afval Maatschappij OVAM + Origin PepsiCo + Parmod Ricard + PetStar + Philips + Pick n Pay + Pinguinorm + Plant Based Products Council + Plant Chicago + Plastic Bank Recycling Corporation + Plastic Collective + Plastic Energy + Plastic Odyssey + The Plastics Pioneer + Plastics Europe + Plastics Forming Enterprises, LLC + Plastics Recyclers Europe + Poppelmann + Prevalence + PT Evoglia Karya Indonesia + Qualipac + Quantis + Ramani Narayan, MSU University Distinguished Professor + Rathbone Greenbank Investments + Ravensbourne University London - Fashion Department + RB + Ra-Poly Evertrak, QRS + Recycling Technologies + Rediscovey Centre + RePack + Replenish Bottling LLC + rePurpose Global + RES Group + Reusable Packaging Association + Riversimple Packaging Ltd + Robeco + Robert Lochhead, Professor and Director Emeritus of Polymer Science + Rodenburg Biopolymers + Royal Society of Chemistry + Planet Earth + Rubicon Global + S Group + SAMBITO + Samsae Samsae + São Paulo City Hall + Sarasin + Partners + SC Johnson + Schneider Electric + School of Management + Politecnico di Milano + Schwarz Group (Lidl & Kaufland) + Scottish Government + Sealed Air Corporation + Searious Business + Selfridges + Serioplast Global Services Spa + Shanghai Rendu Ocean NPO Development Center + SHAPES IN THE SAND + Sidal + Silgan Plastics + SIRGLR + Sistema B International + Sky Group + Skyroom London Ltd + Smart Waste Portugal + Business Development Network + Solid Waste Association of North America + SONAE-IG + Sostenibilidad 360ES + South Pole + Spadea + SPI + Spinlock + Splash Ltd + Stanley Black & Decker + Stella McCartney + Stora Enso + Suez + Superdry Plc + SUSTAIN + Sustainable Business Network + Sustainabilitys + Svensk Plastindustriering (SPII) + SWANIA + Swire Coca-Cola Ltd + SYSTEMIQ + Taiwan Circular Economy Network (循環台灣基金會) + Target Corporation + Target Australia Limited + TC Transcontinental + Termoanagobles, SA de CV + TerraCycle + Tatra Pak + The Association of Plastic Recyclers + The Better Packaging Co. + The Bio-D Company Ltd + The City of Copenhagen + The City of Ljubljana, Slovenia + The Clorox Company + The Club of Rome + The Coca-Cola Company + The Consumer Goods Forum + The Eric and Wendy Schmidt Fund for Strategic Innovation + The Faculty of Entrepreneurship & Innovation + VIA University College + The Finnish Innovation Fund SITRA + The Global Entrepreneurship Facility + The Government of France + The Government of the United Kingdom + The Green Creative Lab + The Green Earth + The Institute for the Study of Science and Technology, National University of Quilmes (ESCT-UNQ) of Argentina + The Make-Cup Brand Make-Cup Concepts LLC + The Ocean Race + The Recycling Partnership + The Renewal Workshop + The RSA + The Wallace Government + Think Beyond Plastic + Tropic Corp + TOMRA Systems ASA + Topolyca + Tricities + Trilium Asset Management + Tuboack Verpackungen Gesellschaft m.b.H + Tupperware + UCL + Ultra Capital + Uncover Skincare BV + Unilever + Universidade de Trás-os-Montes e Alto Douro + Universitat Gent + University of Edinburgh + University of Northumbria, Newcastle + University of Portsmouth + UPM Rafalactic + Uppa UpCycling Plastic BV + ValGroup + Veolia + Verstraete in mould labels + Vert Asset Management + Via BioEnergia Ita + Walmart Inc. + Warner Babcock Institute for Green Chemistry + Waste Ventures India Pvt. Ltd. + WasteChange + Water Unite + Werner + Mertz GmbH + Woolworths Holdings Limited + World Economic Forum + Worm Again Technologies + WPP + WRAP + Wraple International Ltd. + World Wildlife Fund (WWF) + Xiamen Luhal Pro-environment Inc. + Zero Waste Shop Moscow + Zespli Group Limited + Zevin Asset Management + ZigZag Global + n/a Plastic Pollution Prevention

The wave consists of all signatories of the Global Commitment as of 11th October 2019

<https://www.newplasticseconomy.org/projects/global-commitment>



SUSTAINABILITY

is no longer a choice

it is a

NECESSITY



# Product Review

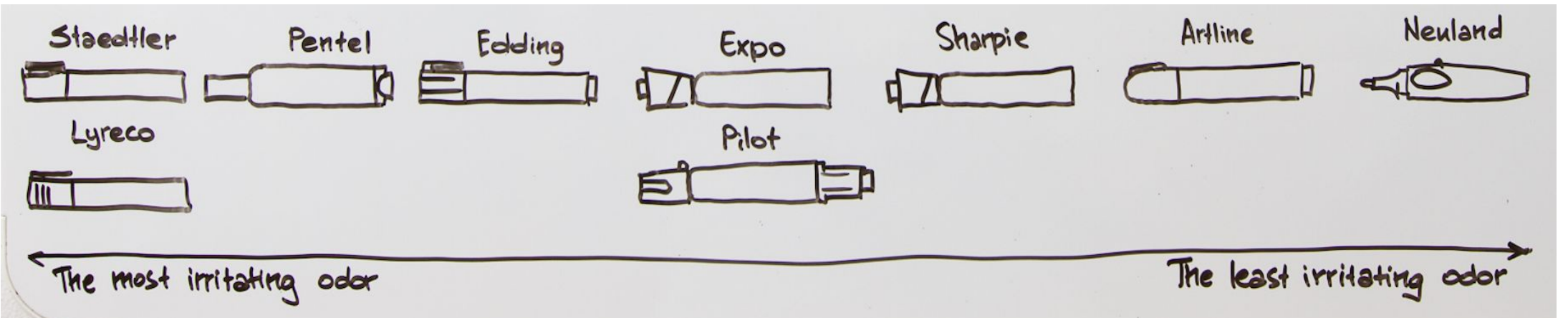
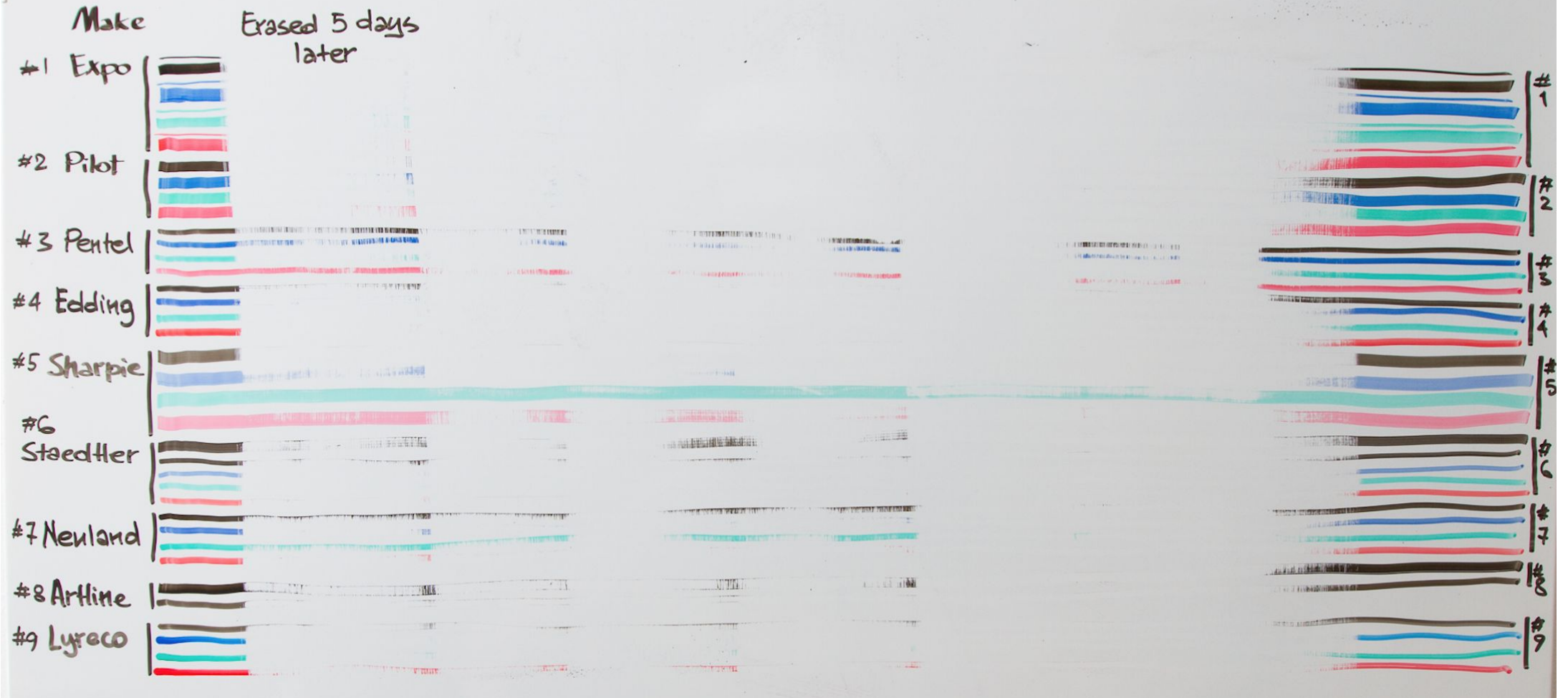


	Expo	Pilot	Pentel	Edding	Sharpie	Staedtler	Neuland	Artline	Lyreco
Black	█	█	█	█	█	█	█	█	█
Grey	—	—	—	—	—	—	█	—	—
Brown	█	—	○	○	—	█	█	—	—
Purple	█	○	○	○	○	█	█	○	—
Blue	█	█	█	█	█	█	█	○	█
Vibrant blue	—	—	—	—	—	—	█	—	—
Light blue	█	—	—	○	—	—	█	—	—
Green	█	█	█	█	█	█	█	○	█
Light green	█	—	—	○	—	—	█	—	—
Yellow	—	—	○	○	—	█	█	—	—
Orange	█	█	○	○	○	█	█	—	—
Red	█	█	█	█	█	█	█	○	█
Pink	█	—	—	○	—	—	█	○	—

— - no such colour    ○ - missing from the review

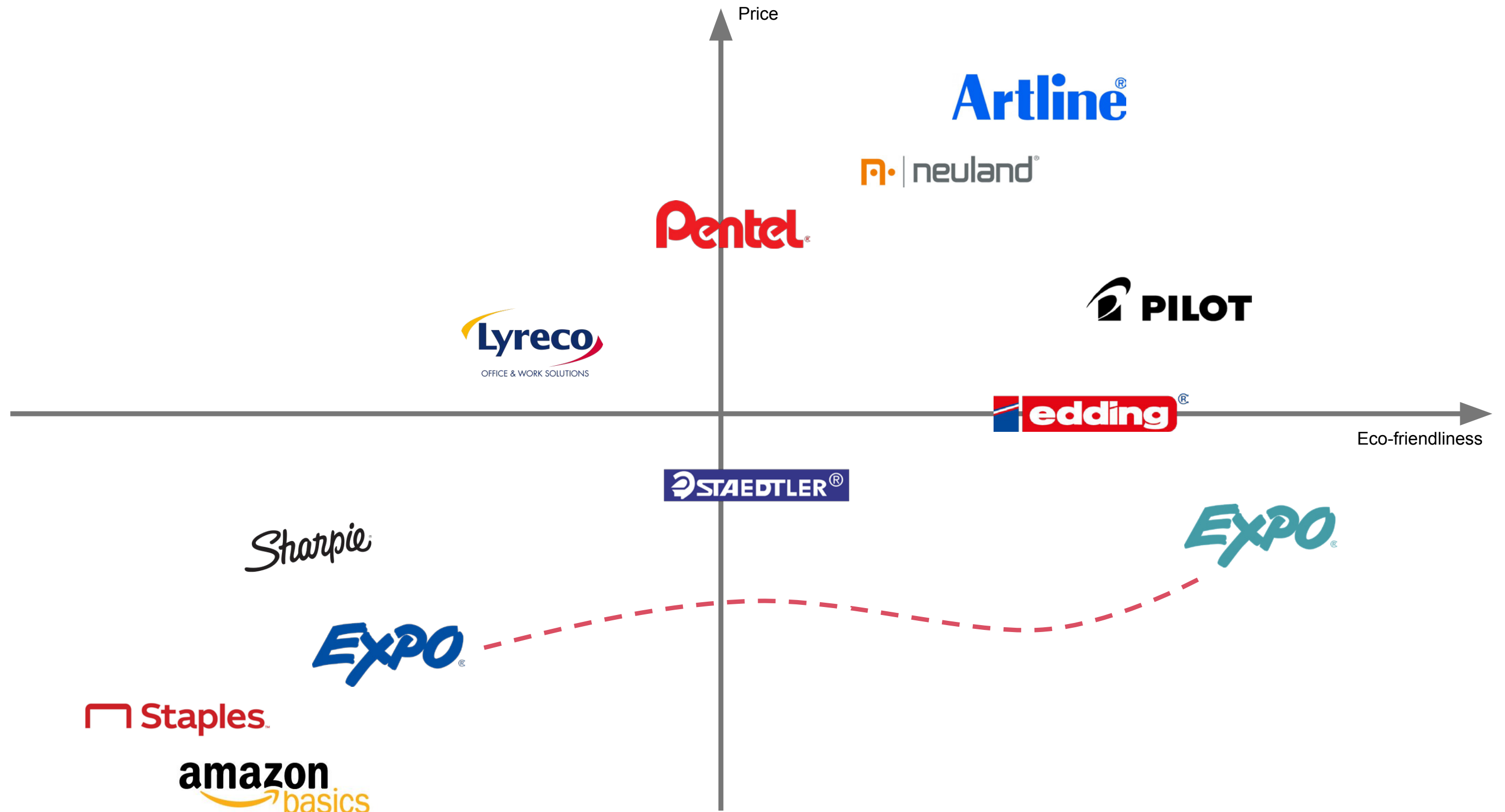


Whiteboard Marker Test  
26.02.2017





# Brand Matrix

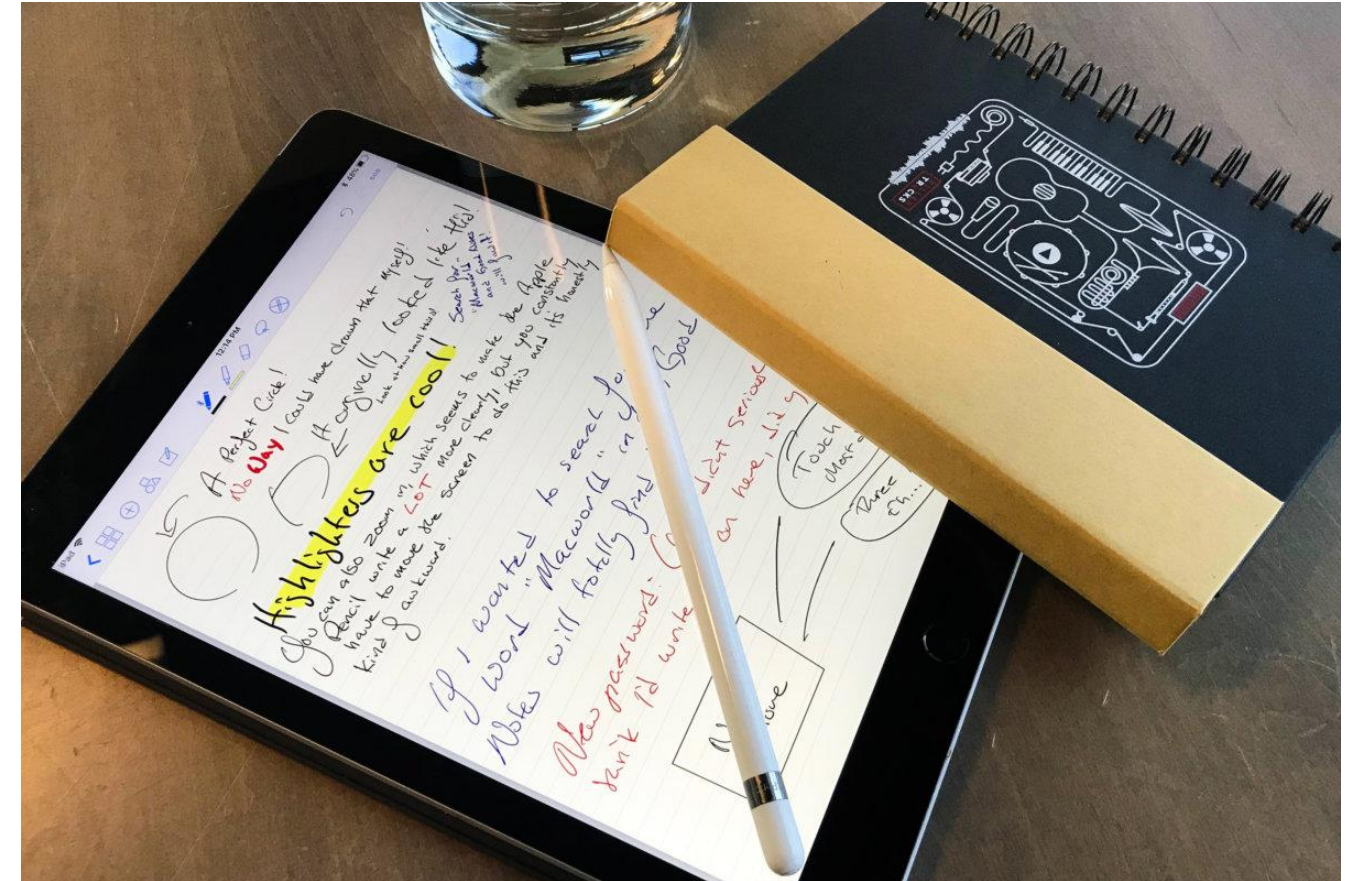
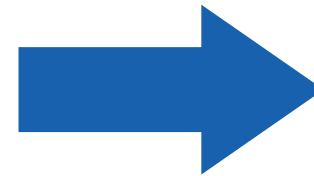




# Extended Market



Dry Erase Markers



Note Taking Tools

<https://www.macworld.com/article/3389816/reasons-to-get-an-apple-pencil-if-youre-not-an-artist.html>





USER



# Scenarios



Lecturing



- x Legibility
- x Hand Grip



Collaborating



- x never use cleaner
- v Post-it Combo



Planning



- x Smudge
- v Display

 Pain Point

 Opportunity



# User Interview



Campus Store  
#01



Department  
#02



General User  
#03



- + Charge to the department
- + Never sell cleaner

- + No plan, filler for free shipping
- + Run out crazy

- + Use paper / OneNote instead
- + Organized vs. privacy





“I **never** sold a single bottle of this cleaner.”

“Department just have the faculties go to the student store and **charge to the department.**”

● Pain Point

● Opportunity





“We **never plan**, marker’s just to make the order for certain amount to get **free shipping**.”

“We honestly don’t buy expo unless it’s on sale. **The Staple brand or Amazon brand** is way cheaper.”

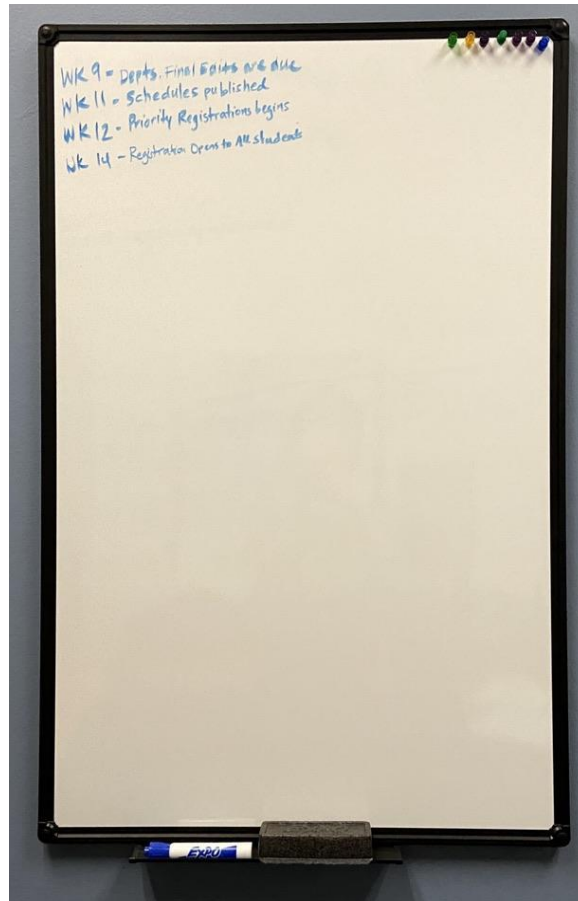
● Pain Point

● Opportunity



# User Interview

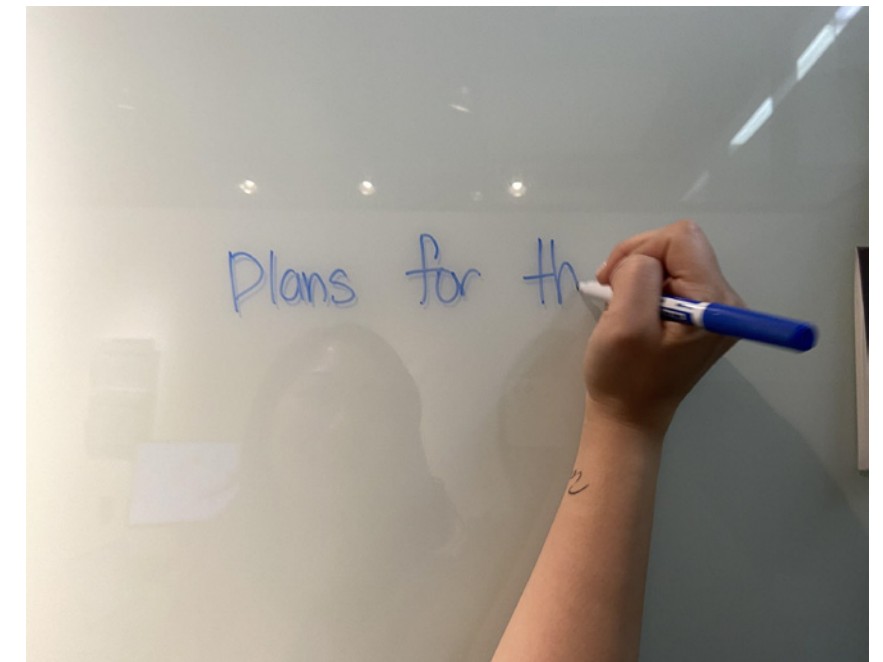
General User



“I buy EXPO myself because my office **come with a white board**. But I don't have a dry-erase board anywhere else, **so I don't have a reason to use it.**”

“I do everything on **paper**. But if I have a white board, it might be a different way.”

“I use **OneNote** more.”



● Pain Point

● Opportunity



# User Interview Takeaway



Lecturing



Collaborating



Planning

**Need**

+ Display  
+ Legibility

+ Display  
+ Documentation  
+ Iteration

+ Display  
+ Privacy  
+ Repurposing

**Want**

+ Engagement

+ Participation  
+ Visualization

+ Feel Organized  
+ Feel in Control

**Pain**

- rarely planned  
- hard to distribute and keep

- disposable notes

- lack of continuity  
- efficiency

 Pain Point

 Opportunity





# STRATEGIES



# Sustainability Strategies

- Recycled
- Recyclable
- Degradable
- Less usage

- Reuse material
- Easy recycled

- Less
- Durability
- Renewable

- Simple
- Reusable

- Return Program
- Reuse

Raw Material

Manufacture

Product

Packaging

Disposal



Sales

- Wholesale
- Round-up Program
- Brand Image

Product Usage

- Digital Ecosystem
- Create Wiring System

## Design & Branding Strategies



# Design Goals

- Rethink material & structure to reduce environmental impact
- Close the loop - Create a circular product life cycle
- Create a holistic writing experience for different use cases

# Key Opportunities

## Rethink materials

- Use sustainable materials to manufacture

## Recreate mechanical structures

- Avoid commingles and contaminations

## Refine product line

- Reduce/add product to create experience

## Close the Loop

- EXPO is more than a disposable

## Direct sales channel

- E-commerce direct contact customers

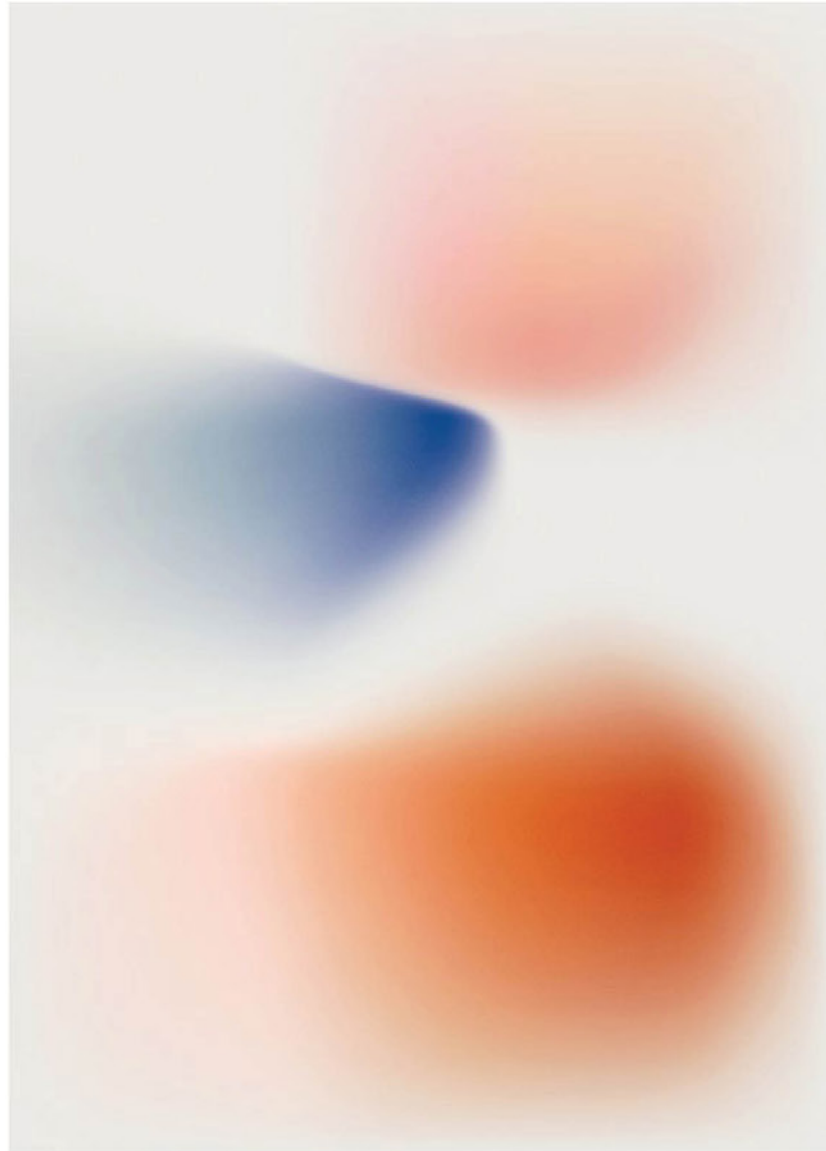




**Concept Development**



# Mood Board



Appear & Translucent



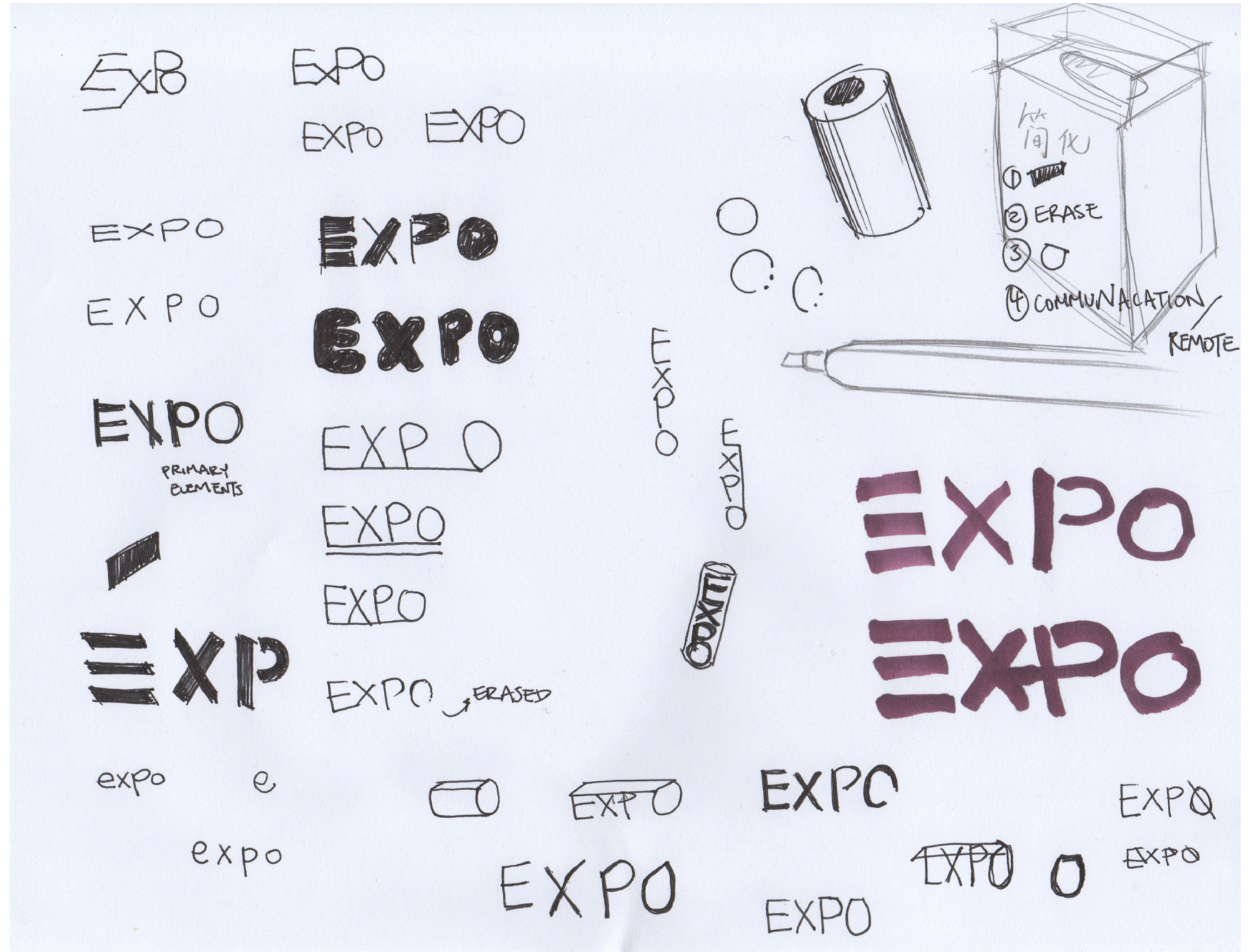
Natural & Minimal



Simple & Colorful



# Logo Ideation



# Logo Ideation

EXPO

e

EXPO.

EXPO

EXPO

EXPO

EXPO

EXPO

EXPO

EXPO

.EXPO

EXPO

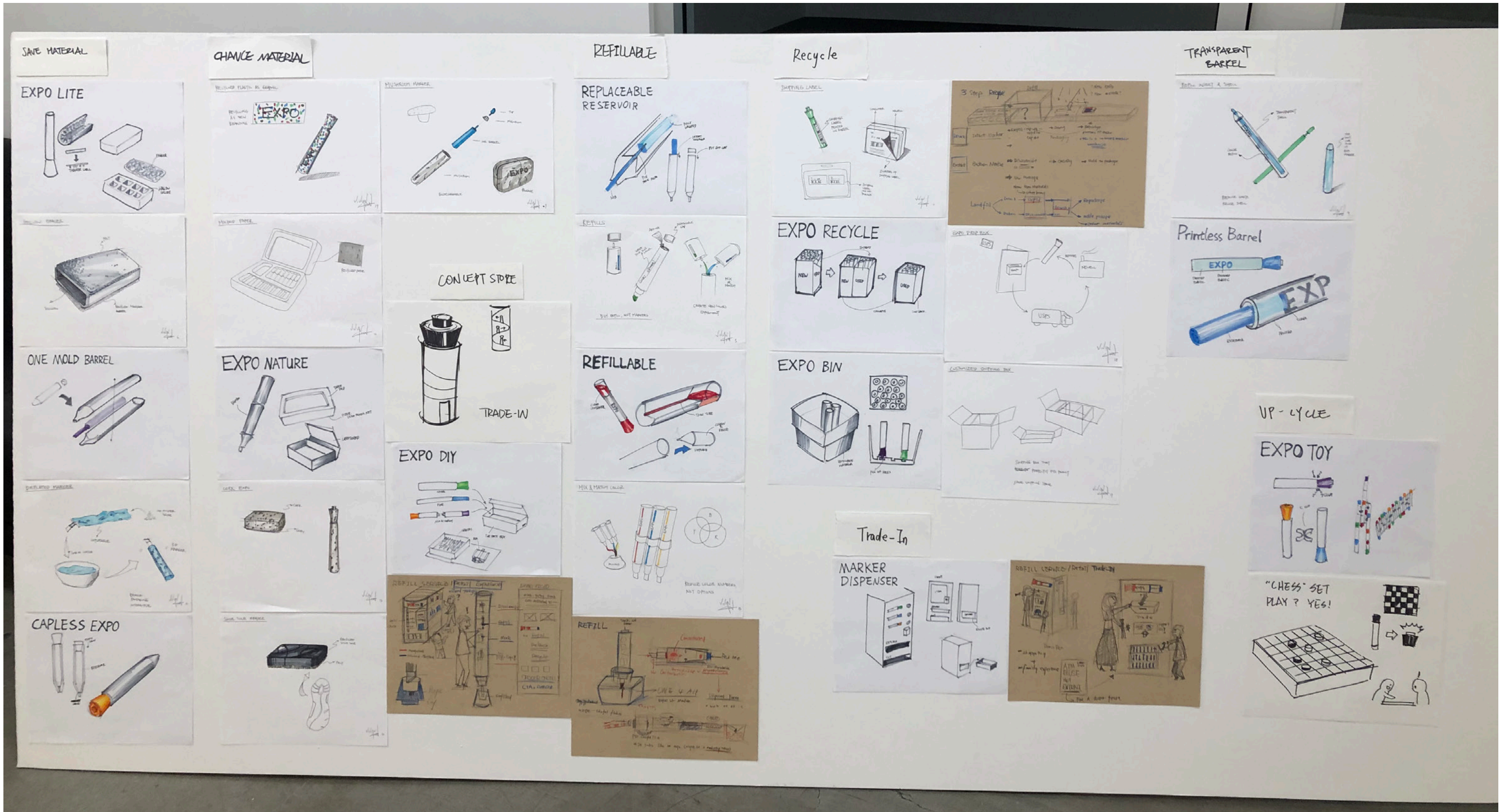
EXPO.



**Final Logo Design**

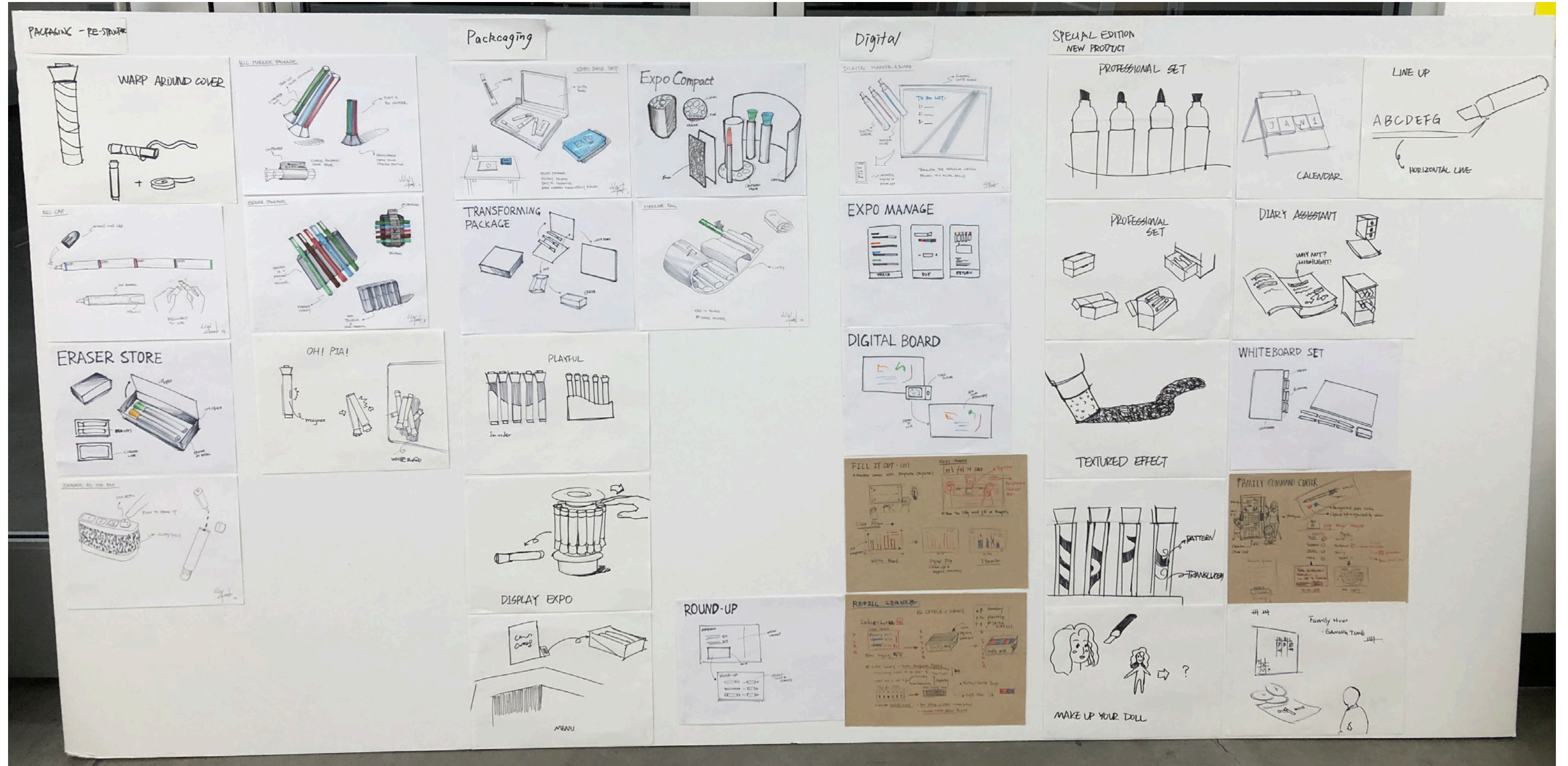
**EXPC**

# Concept Ideation





# Concept Ideation



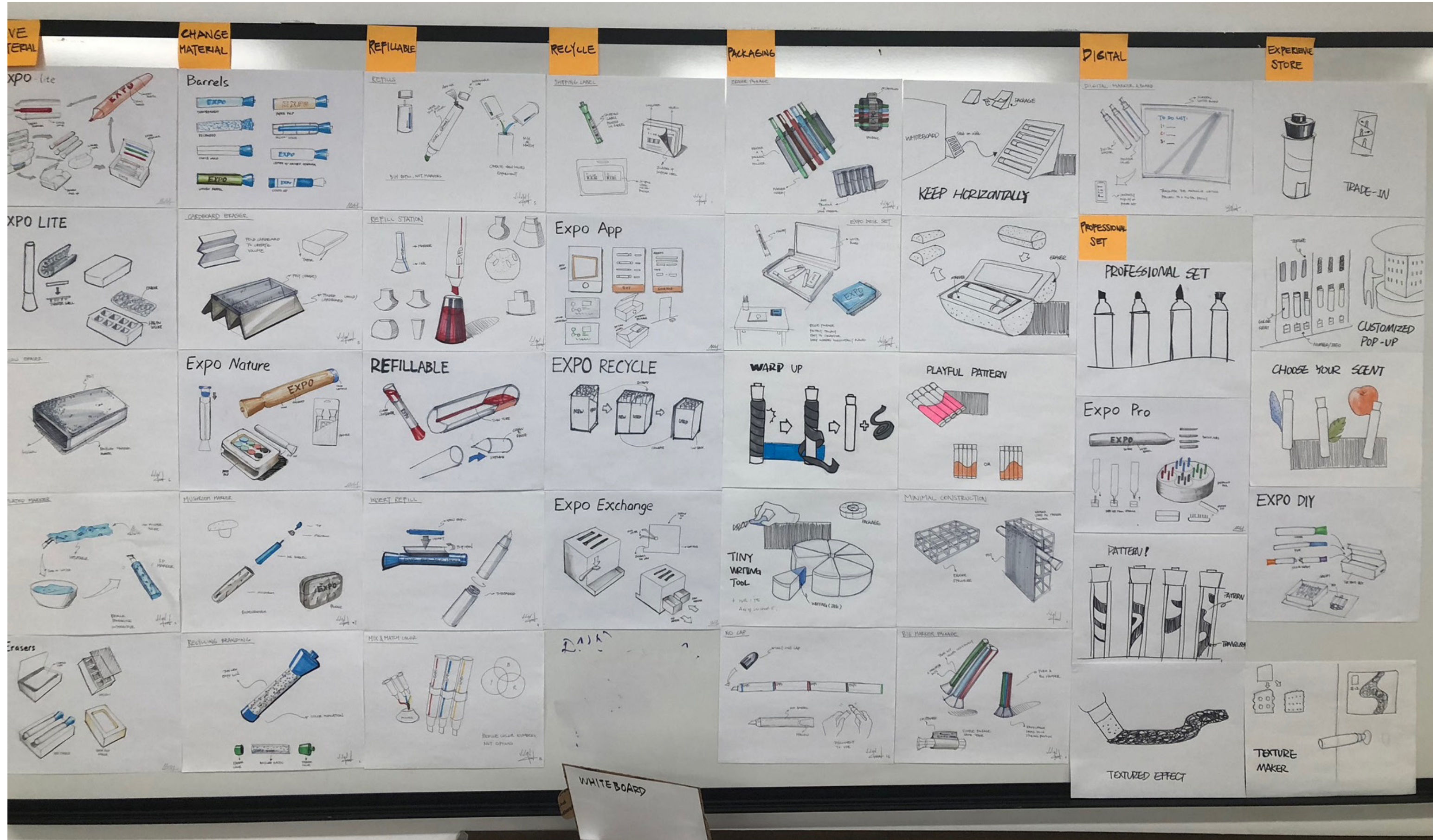


# Midterm Workshop





# Future Concept Ideation



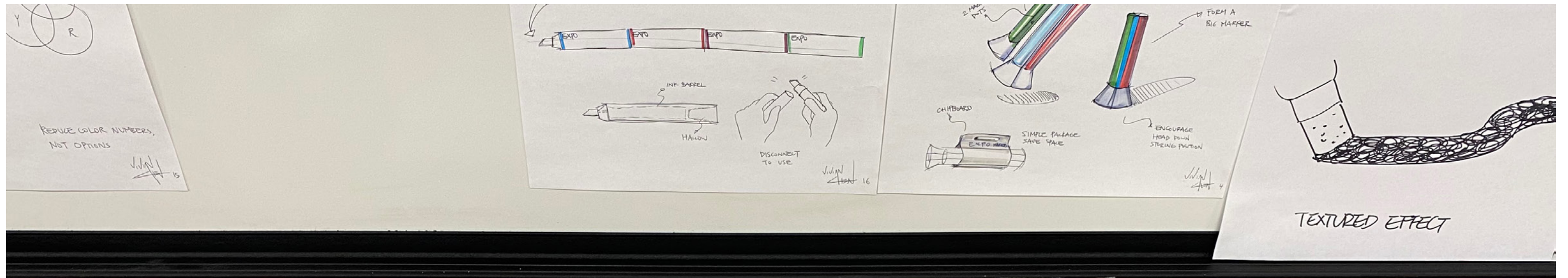


# System Ideation





# Mock-ups





## **Concept #1: EXPO Pro**

Transform disposable marker into a valuable writing tool,

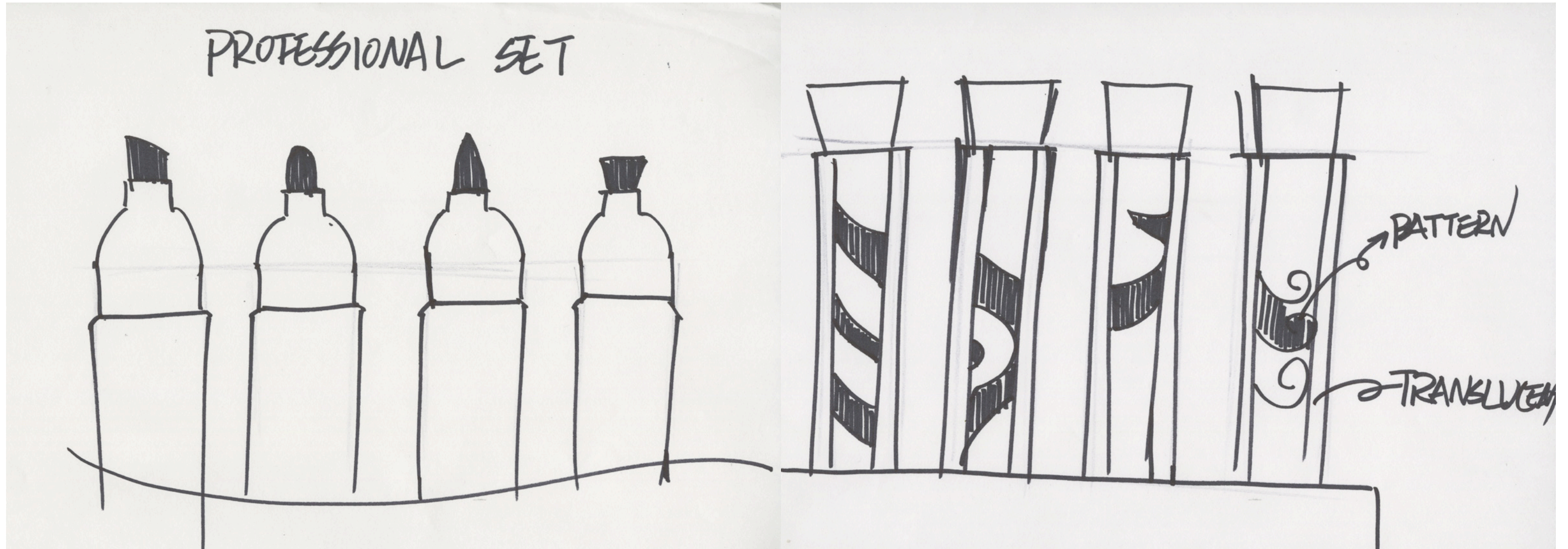
Create a premium package including marker(s) and professional accessories.

### **Features:**

- Premium material & form design
- Refillable barrel / refill dock
- Multiple tips/stamps
- Eraser & Magnet

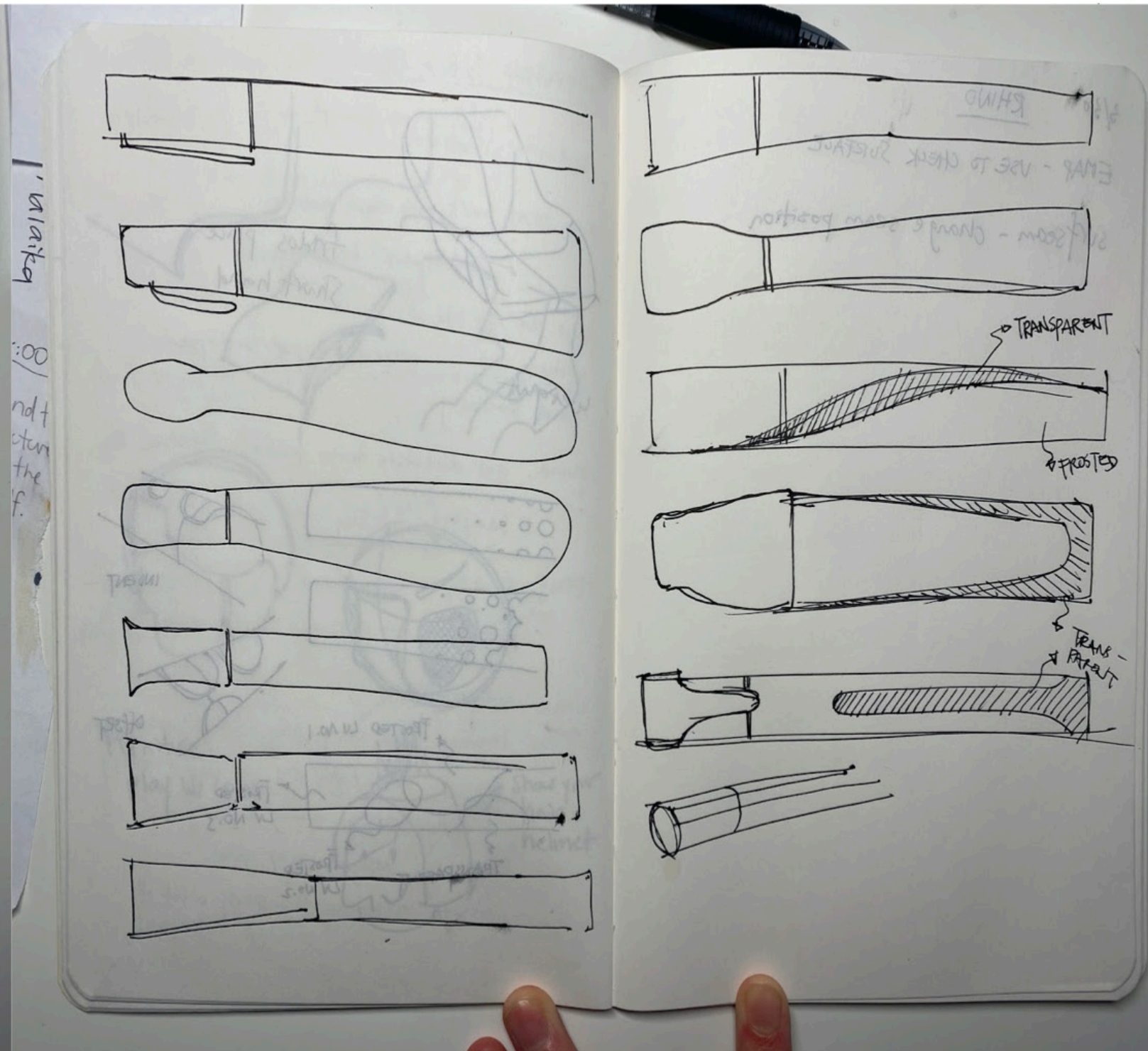
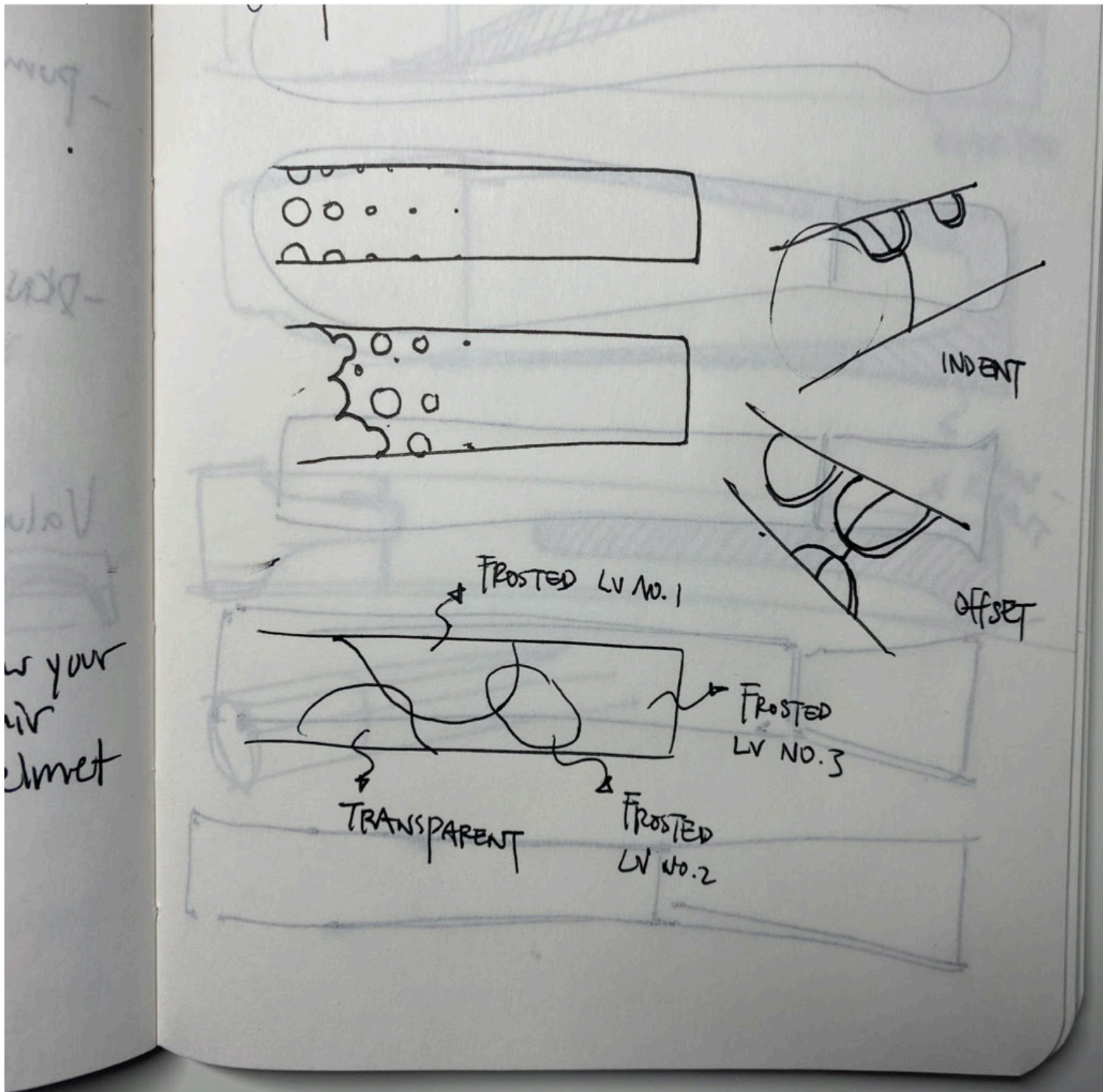


# EXPO Pro Initial Concept



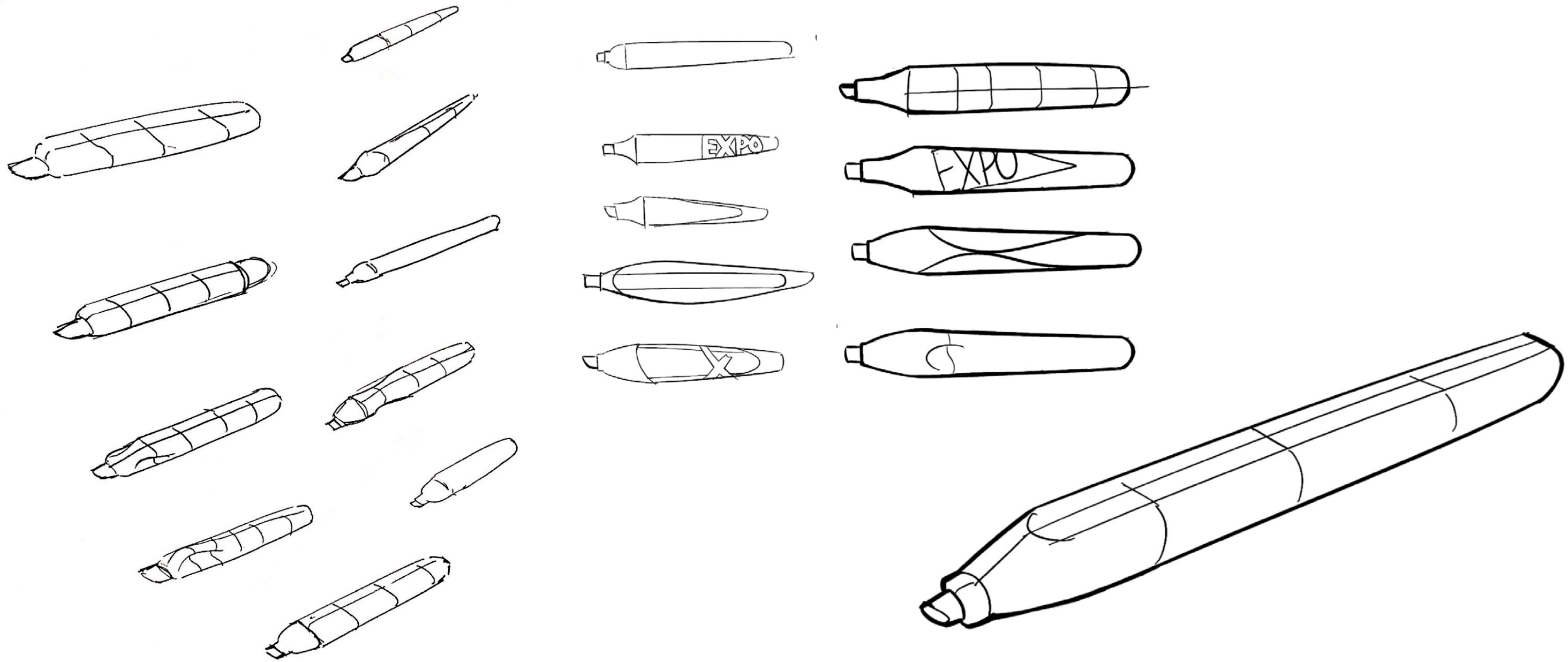


# Marker Form Ideation



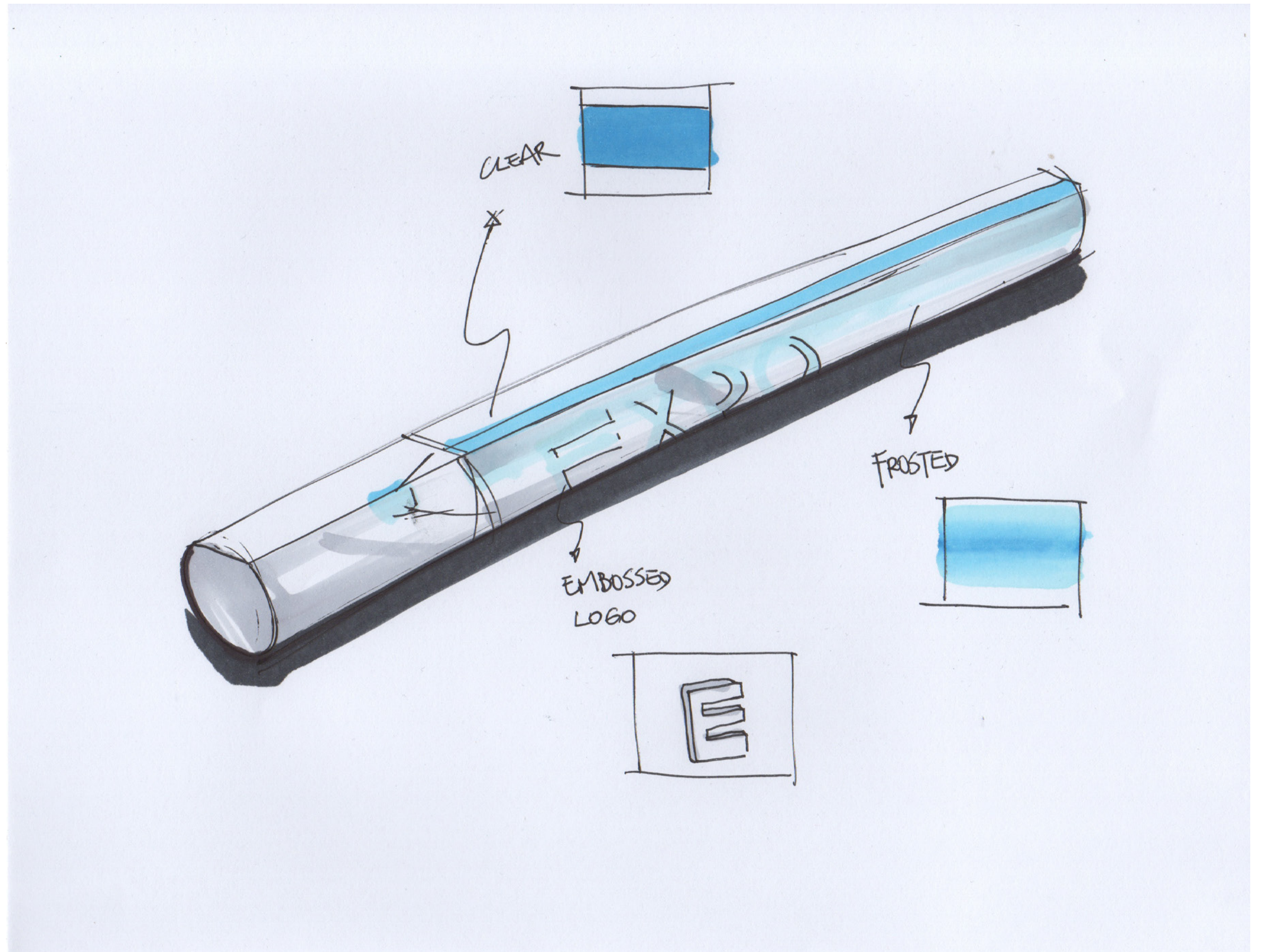


# Marker Form Ideation



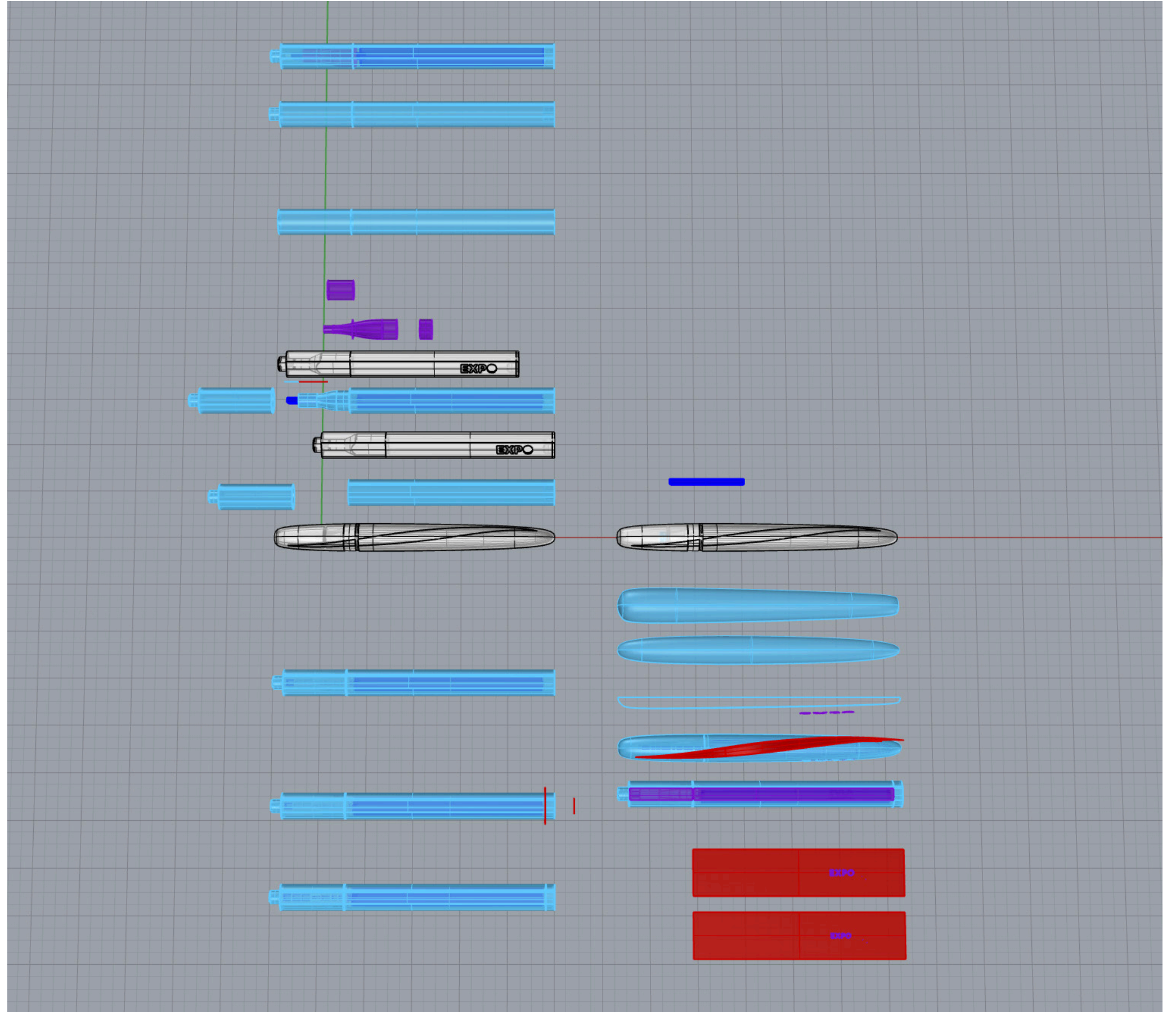


# EXPO Dry Erase Marker Final Concept



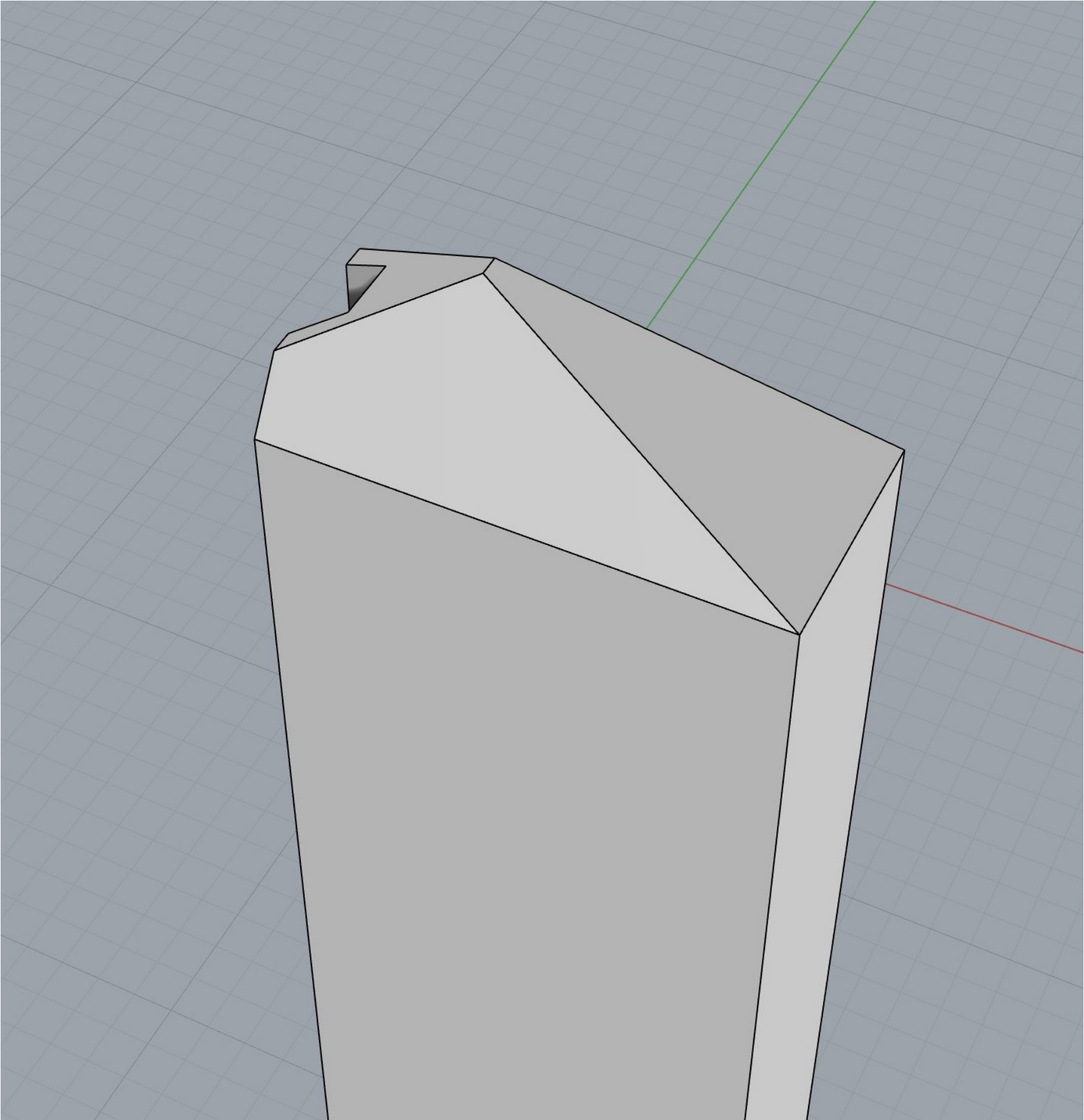


# Marker CAD Modeling



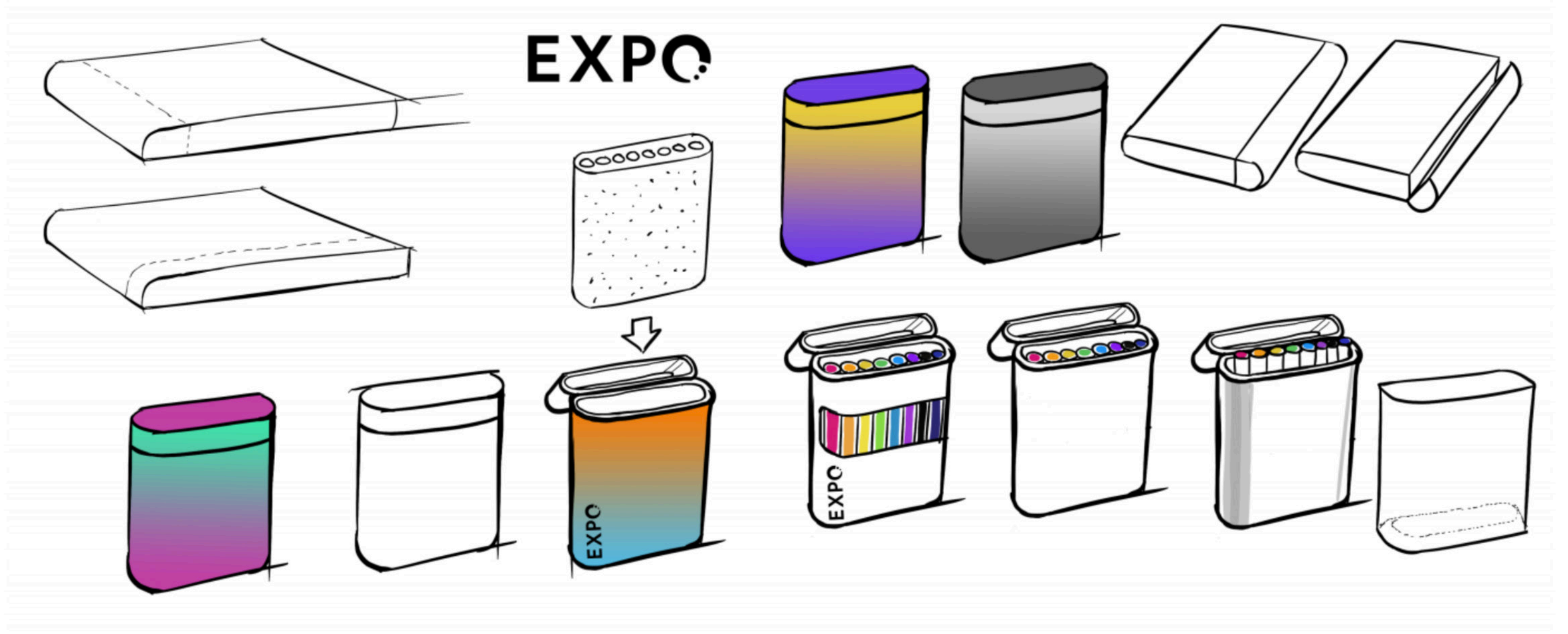


# Final EXPO Pro Nib Design



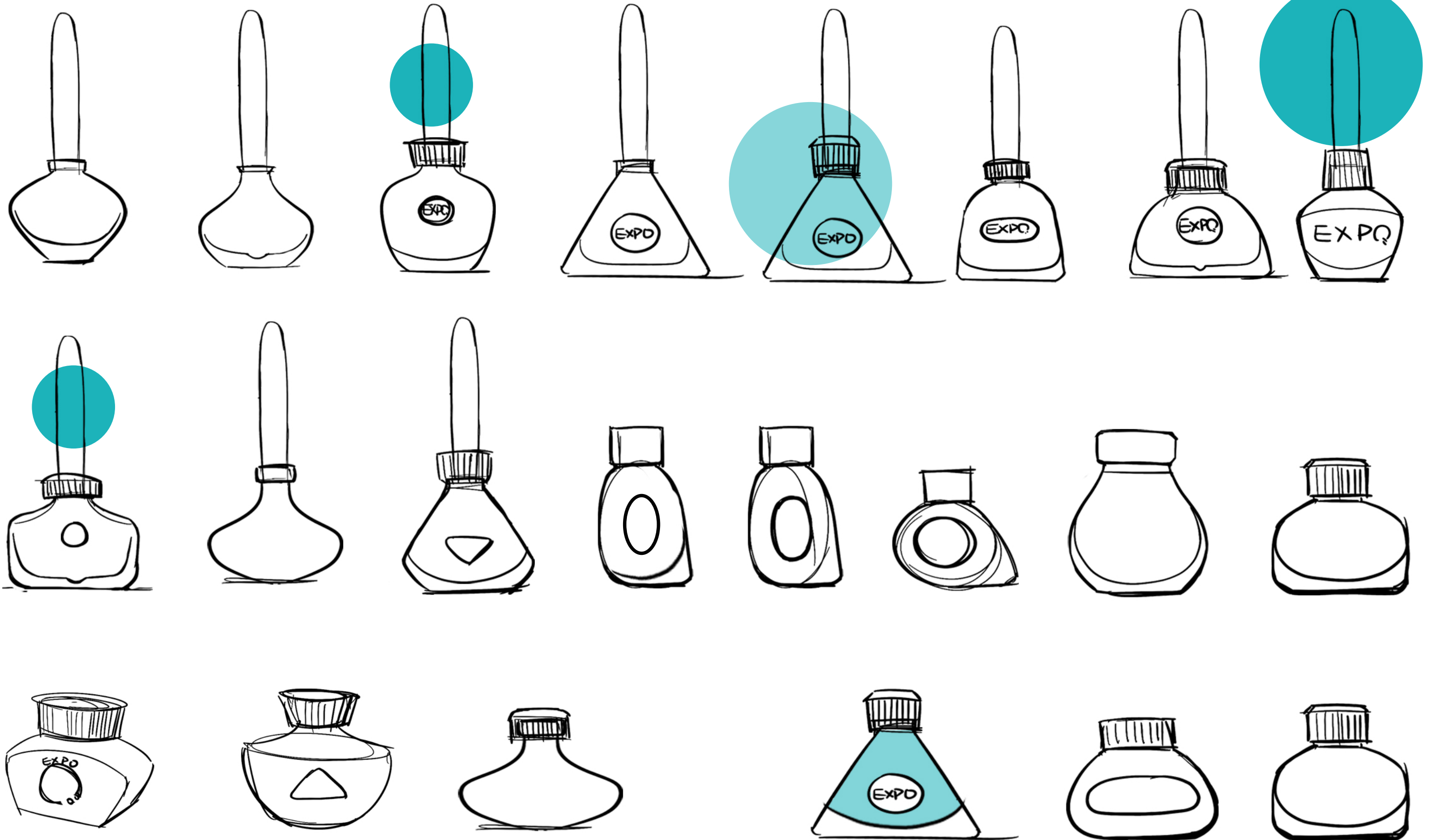


# EXPO Pro Packaging Design Ideation



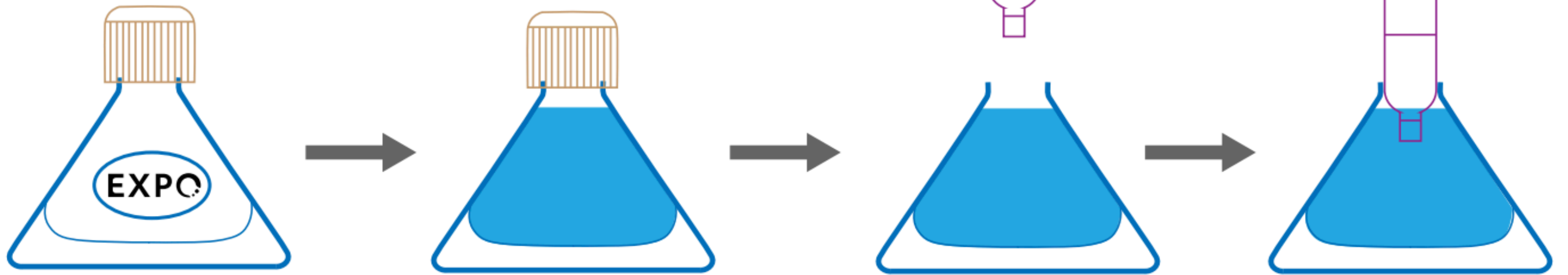
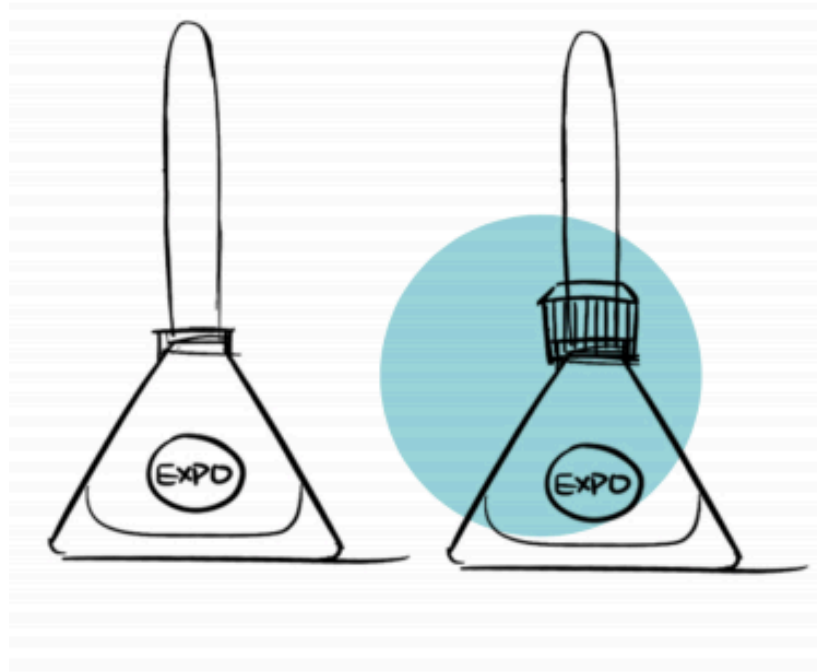


# EXPO Pro Refillable Ink Bottle Ideation





# EXPO Pro Refillable Ink Bottle Final Concept





## Concept #2: EXPO Collective

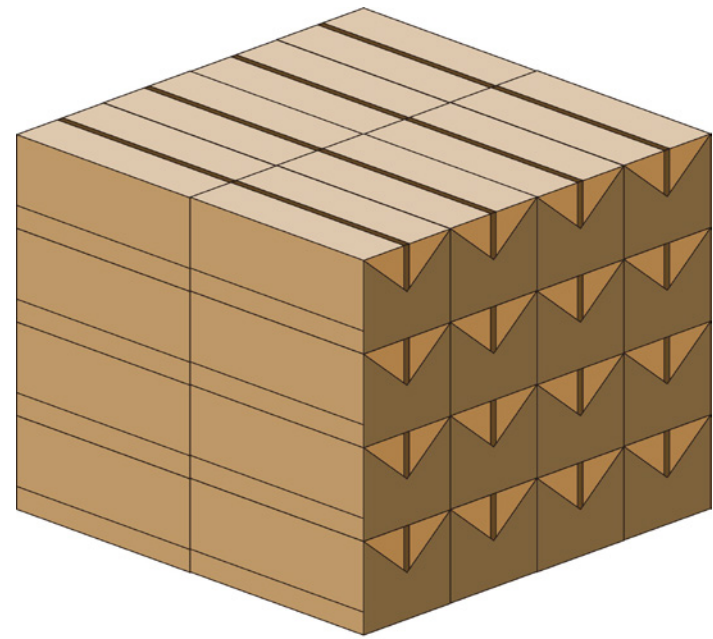
Streamlining the marker recycling process,

Create a system for organizations to easily recycle and reorder.

### Features:

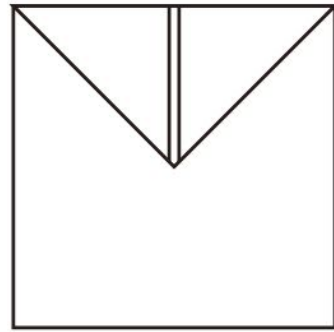
- Recyclable marker design
- Recycling container design
- Expo managing app for recycling and reordering

# EXPO Collective Mechanical Structure Initial Concept

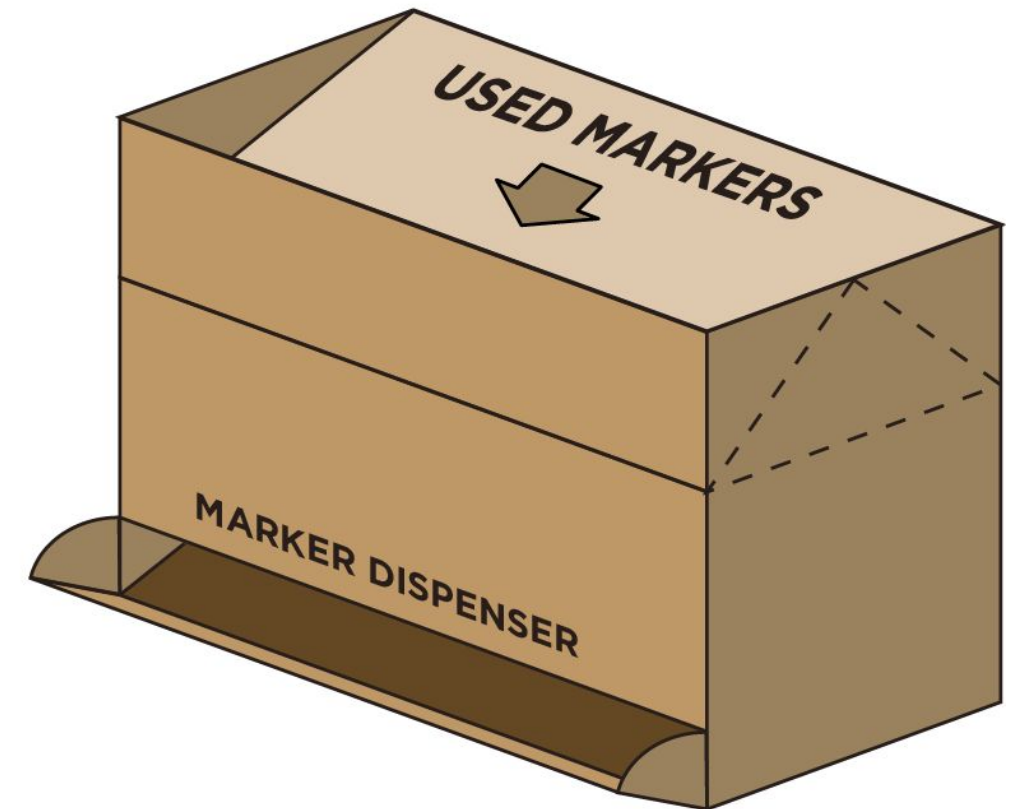
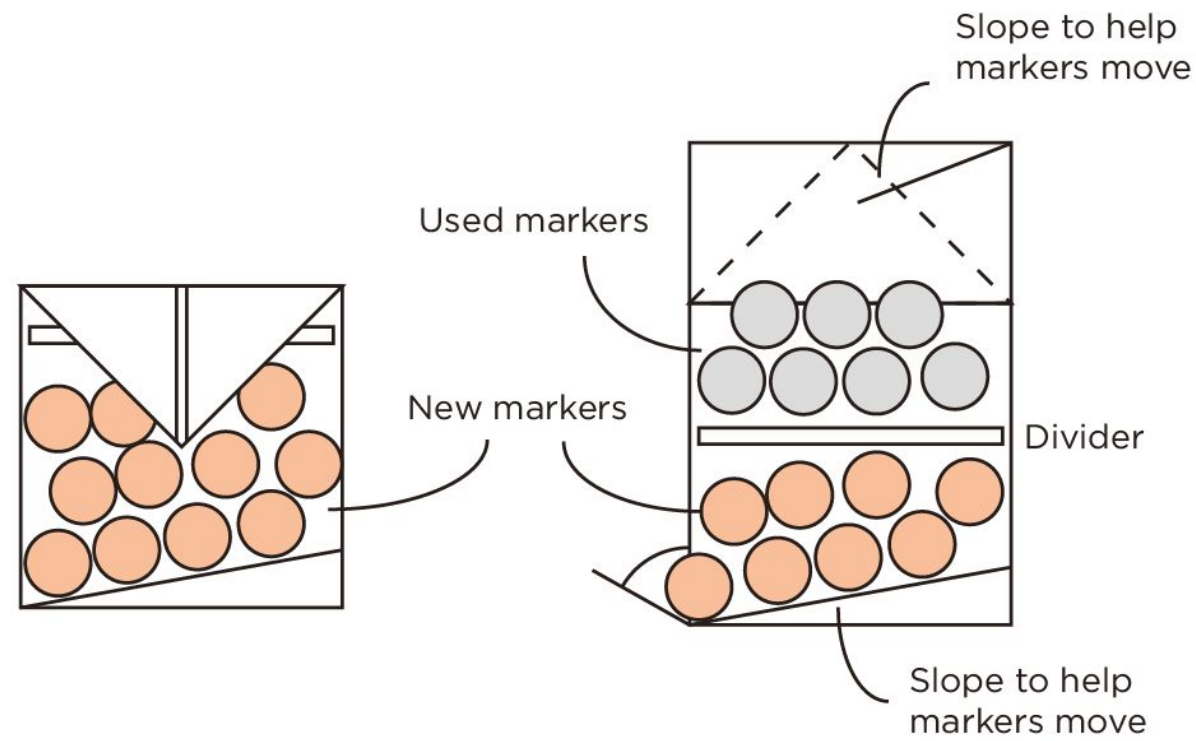
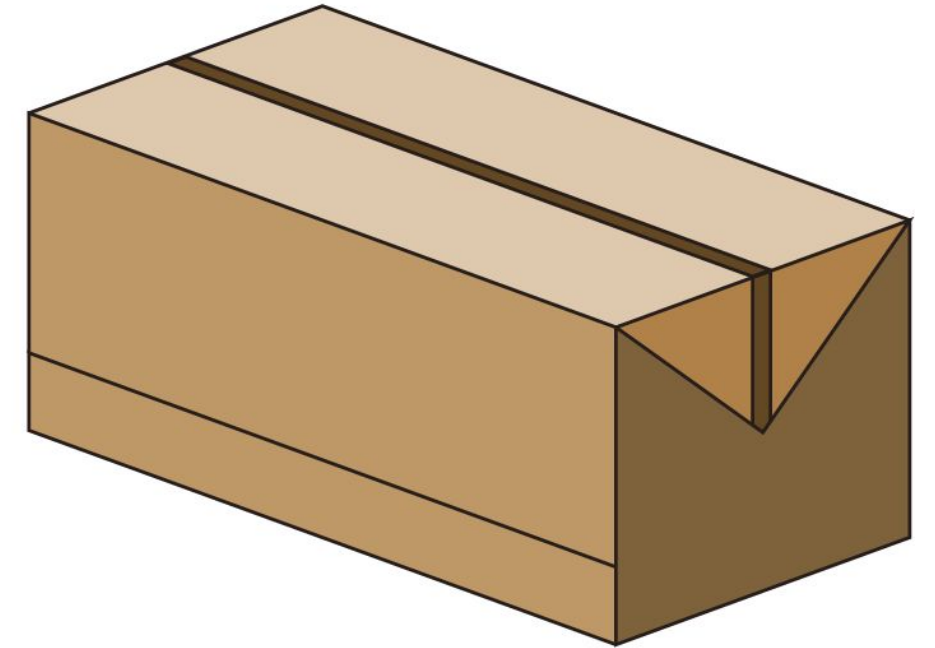
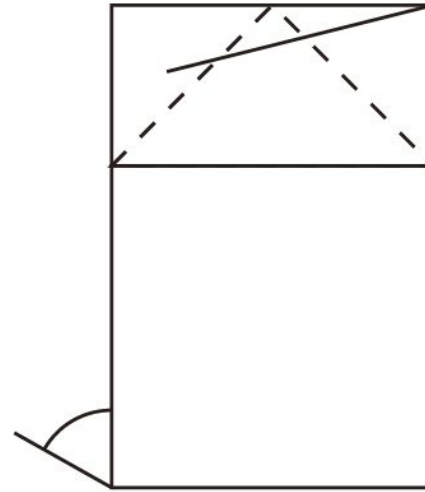


Buy in Bulk

Collapsed:

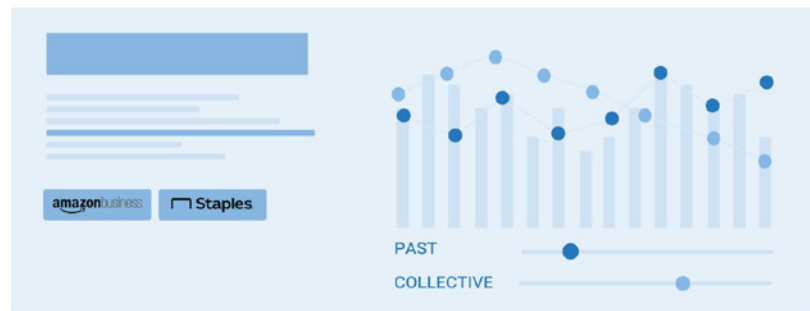


Expanded:

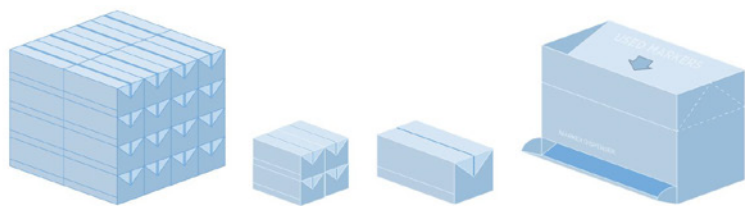




# EXPO Collective Web Page Development



BUY IN BULK  
RETURN IN BOX



## ECOSYSTEM



CURATOR

Email Campaign  
Online Ads

Landing Page  
Service Info

Subscribe Plan  
Refiller

Subscription  
Plannign  
Distribute & Refill

Mailing  
Circulation  
Tracking  
Refill

Impact Report  
Loyalty Plan



MOBILE

Retail Experience

Reviews/Blog  
Refiller

Refill  
Mailing

Loyalty Plan

## Concept #3: EXPO Remote

Introducing expo dry-erase system to the future remote workers,

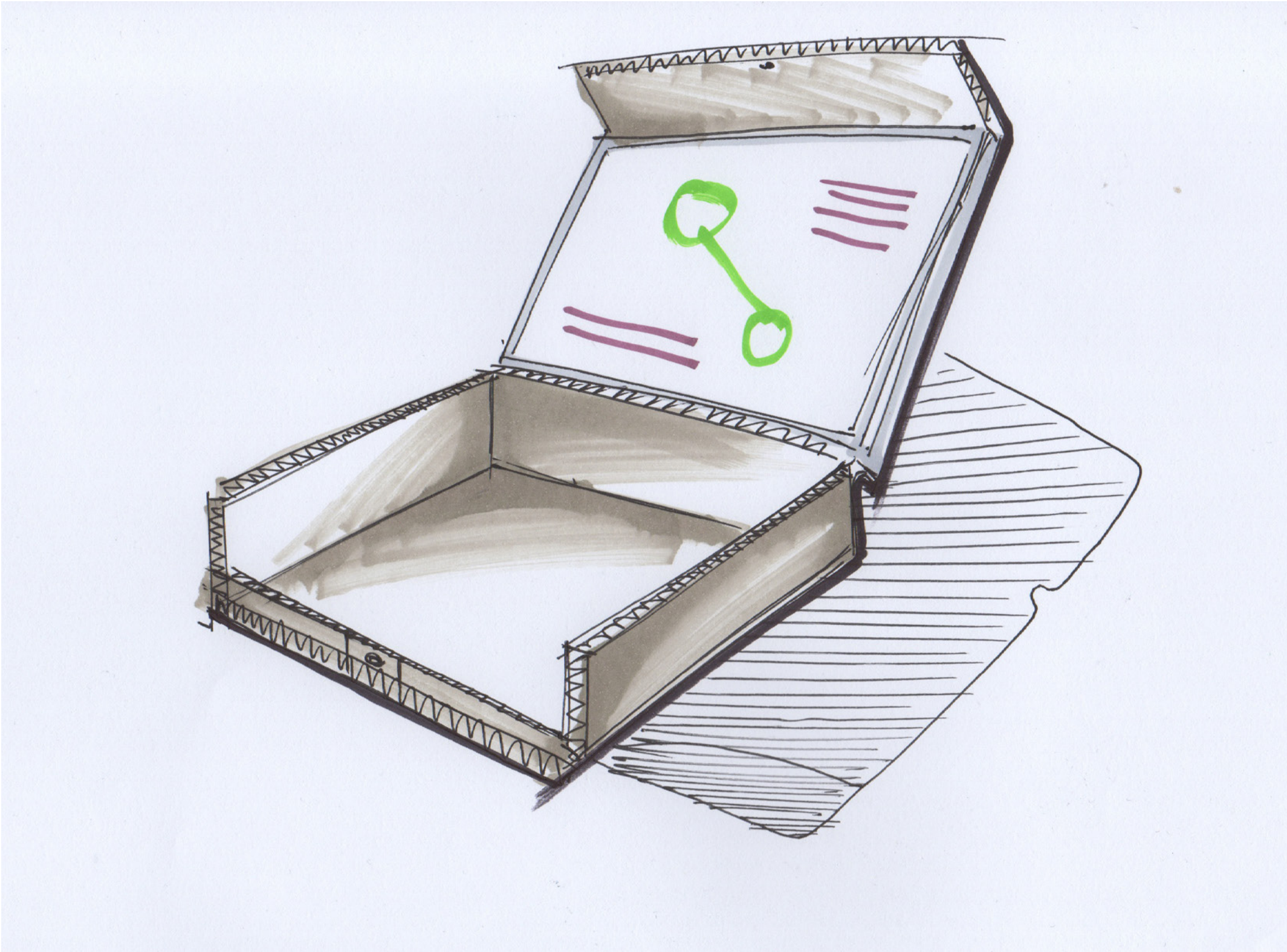
Create a set of products to support remote communication & collaboration.

### Features:

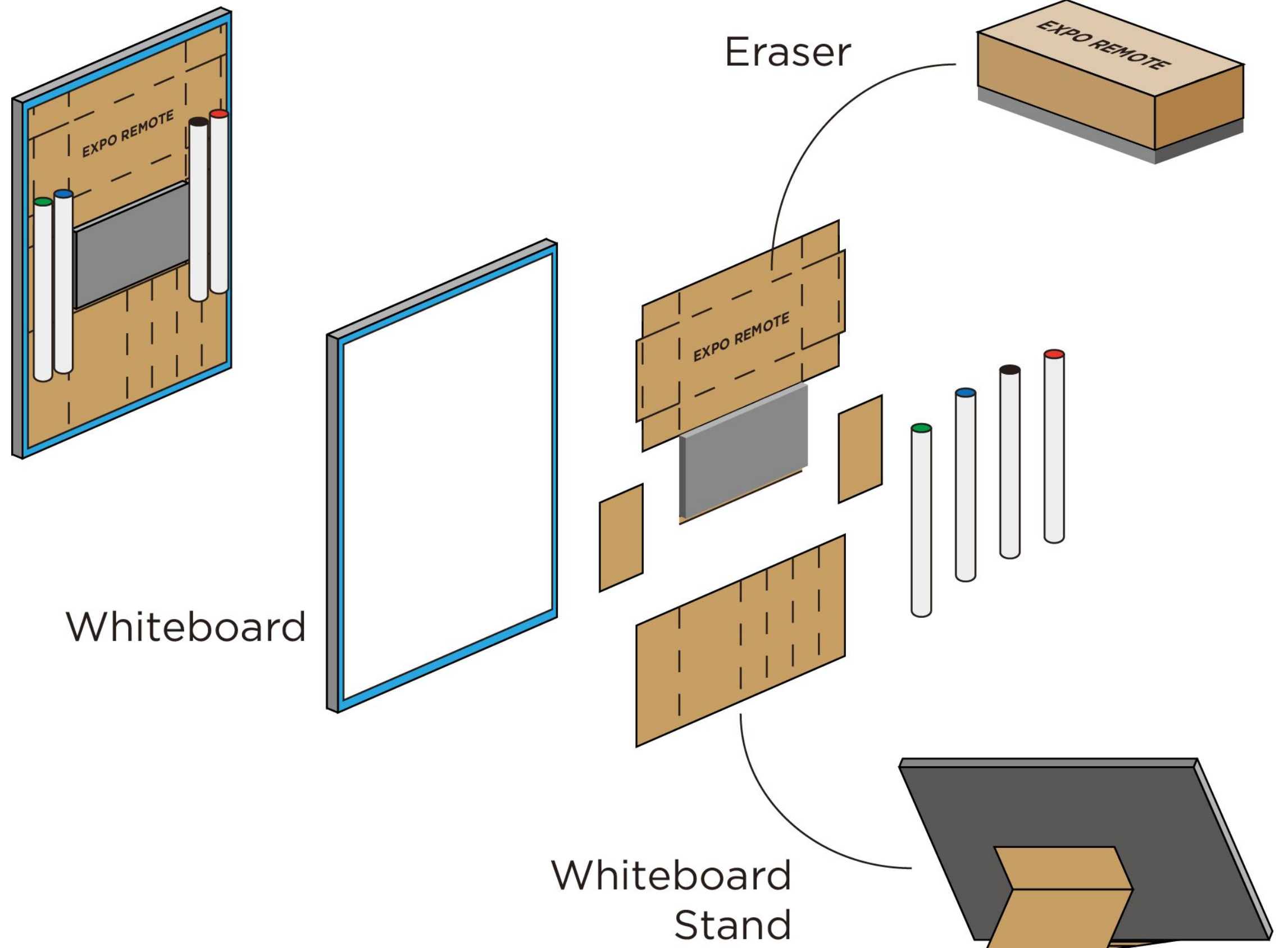
- Writing set with markers, eraser and whiteboard
- Note managing app for scanning, organizing, sharing and collaboration



# EXPO Remote Package Initial Concept

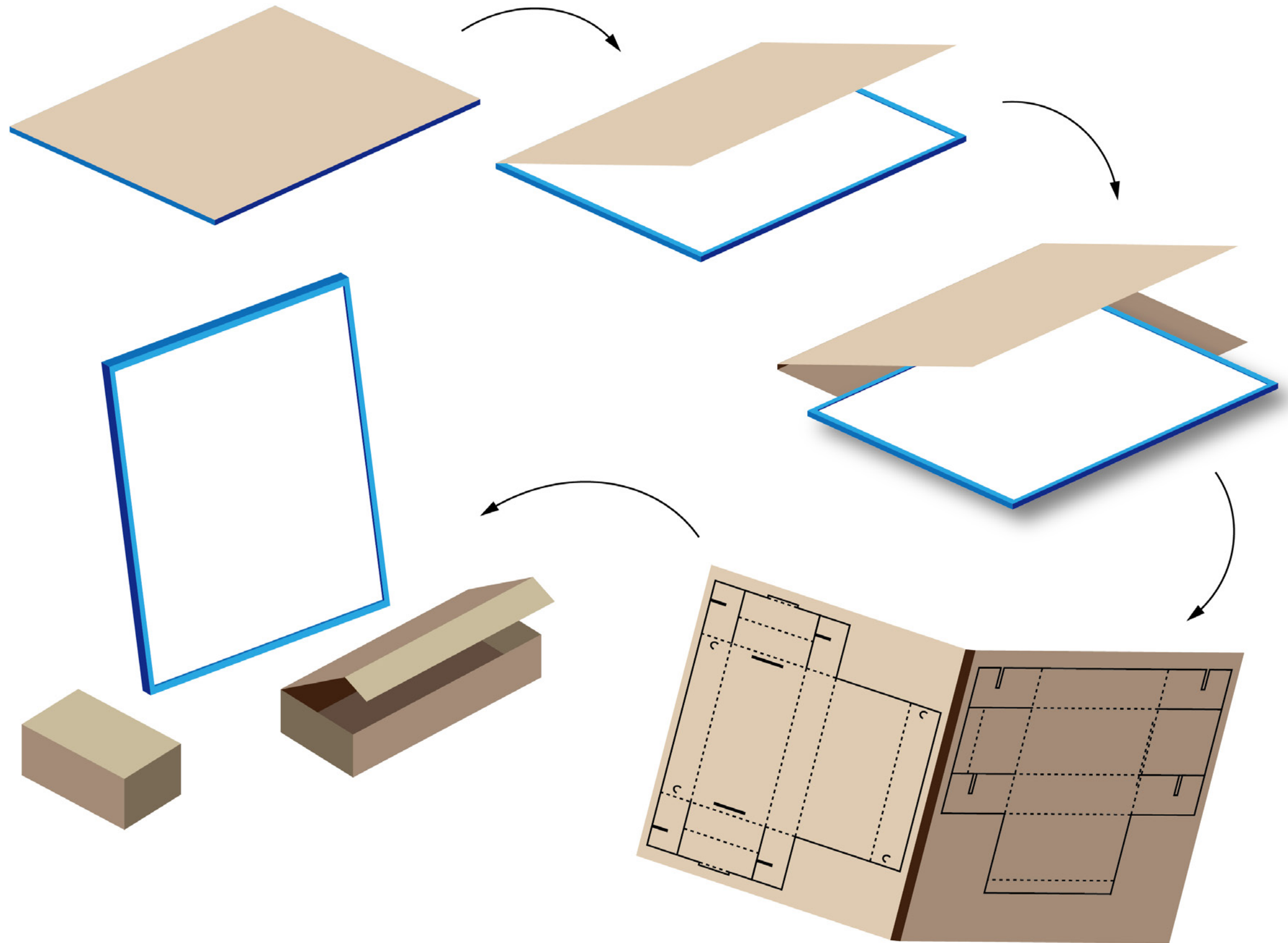


# EXPO Remote Package Structure Initial Concept





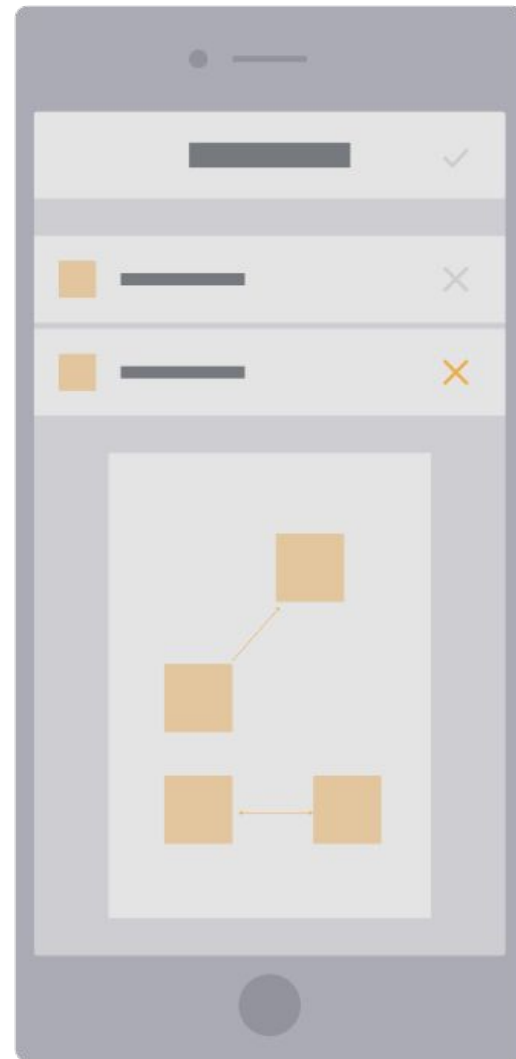
# EXPO Remote Package Structure Final Concept



# EXPO Remote App Development Key Features



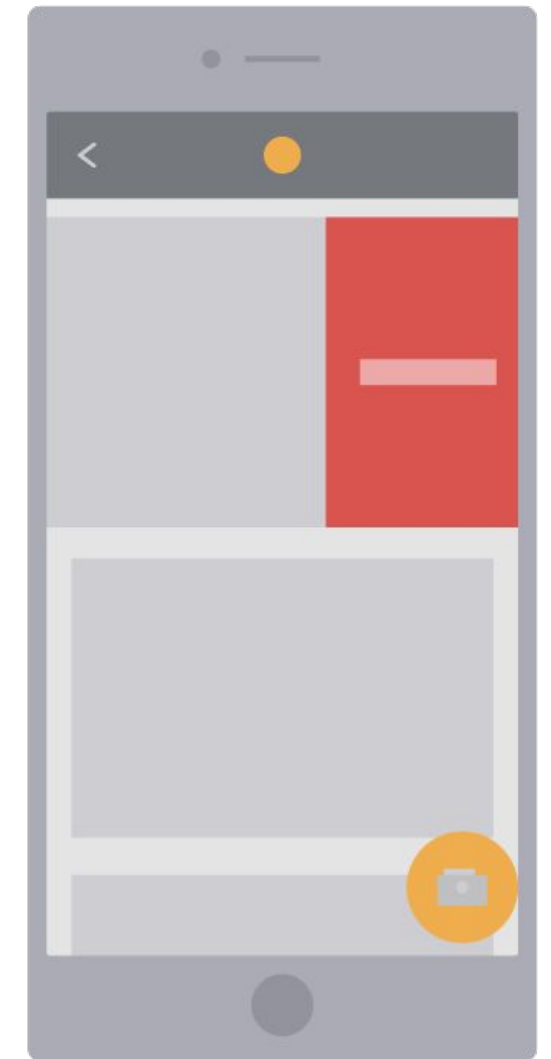
Home



Organize



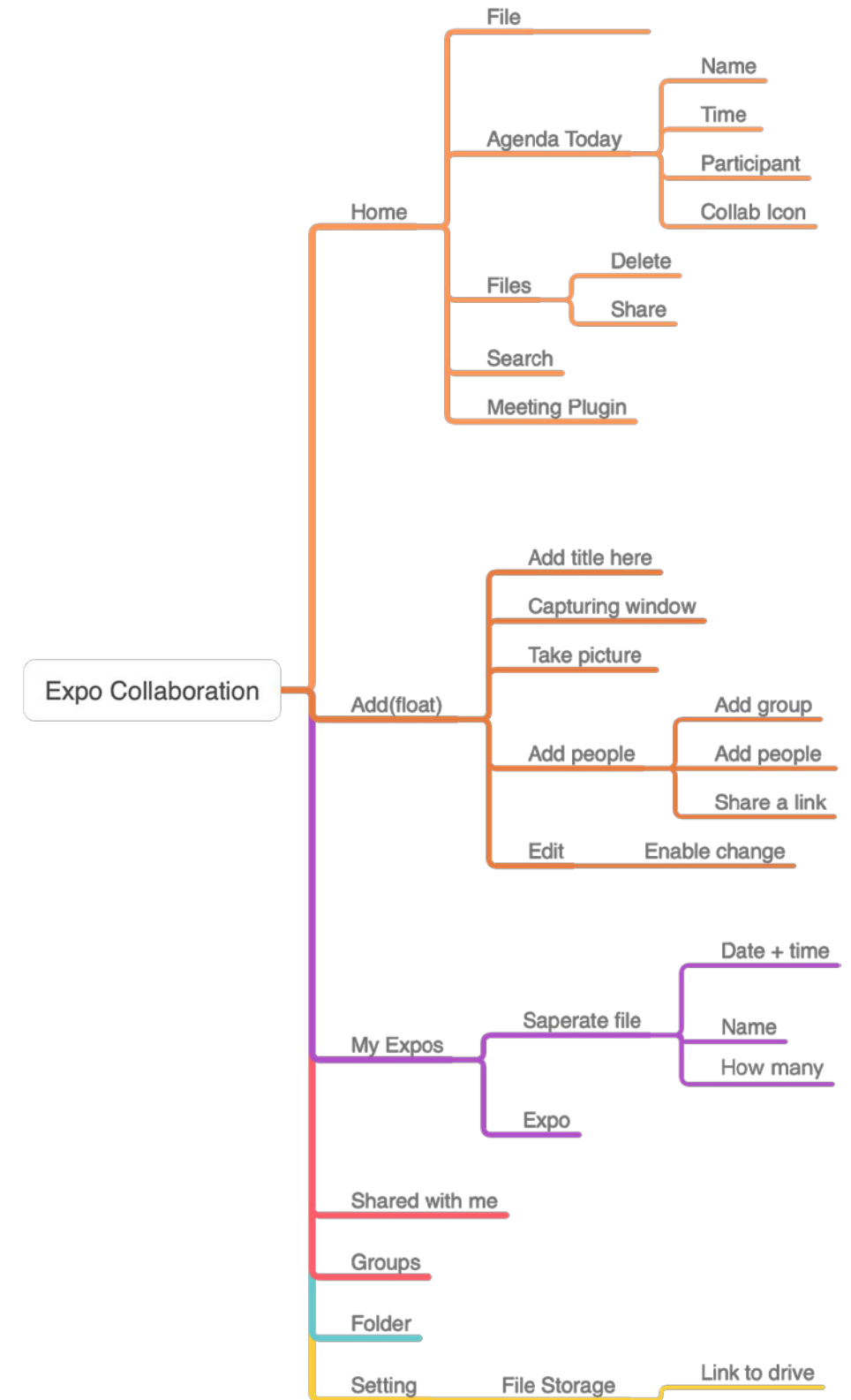
Share



Interact



# EXPO Remote App Development Low Fidelity Wireframe





**Final Design Materials**



# Material: Recycled PET

PP solid, PS fiber, Clear PP film



**PET**

Solid, fiber, film



Source: Renew-liner Recycled PET fiber & Recycled PET film by Thermal Shipping Solutions



# Material: Recycled PET



<https://www.textile-plastic-materials-recycling.com/polypropylene.php>

Recycled PP



<https://www.nrtsorters.com/galleries/plastics/nrt-web-plastic-flakes/>

Recycled PET





**Final Design Renderings**

# Concept 1



Creating



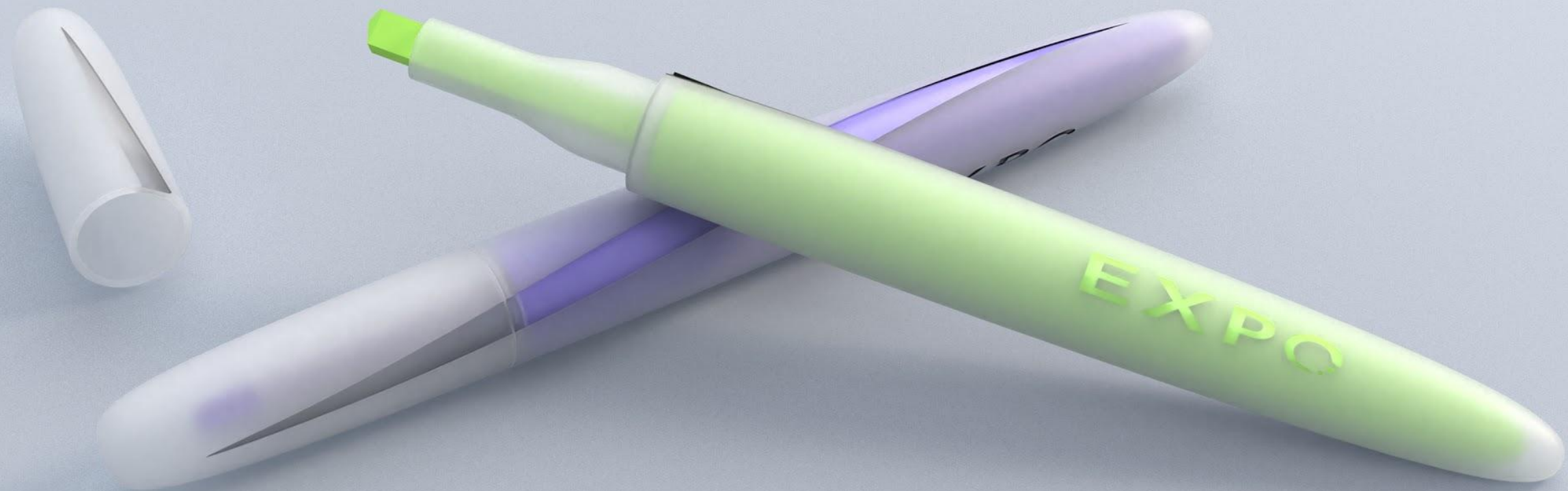
# Expo Pro

Transform Expo markers into valuable writing tool.



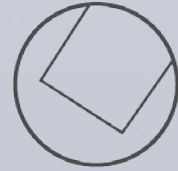


- Premium material & form design
- Refillable barrel / refill dock
- Multifunctional tip
- Exclusive colors

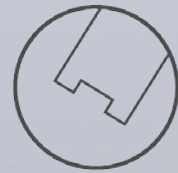




# Multi-Functional Tip



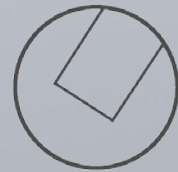
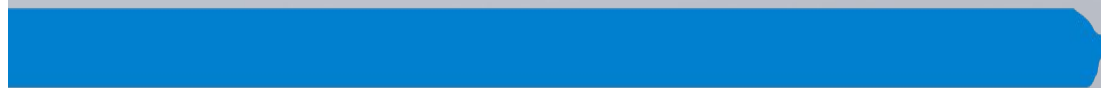
Flat



Double



Thin



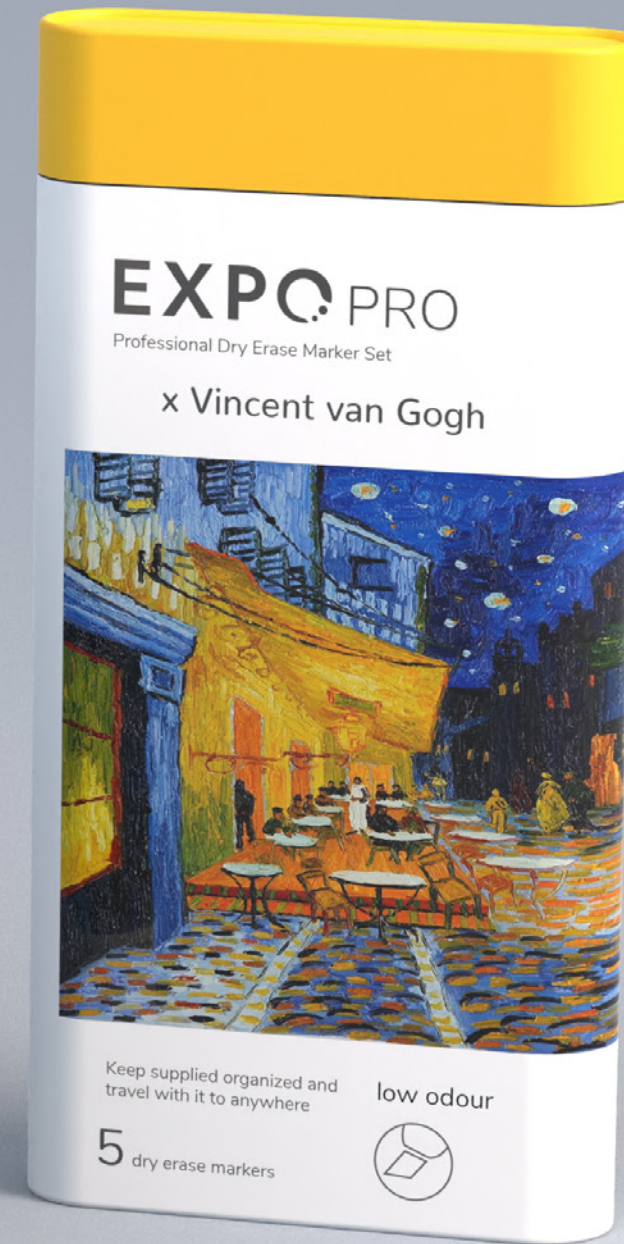
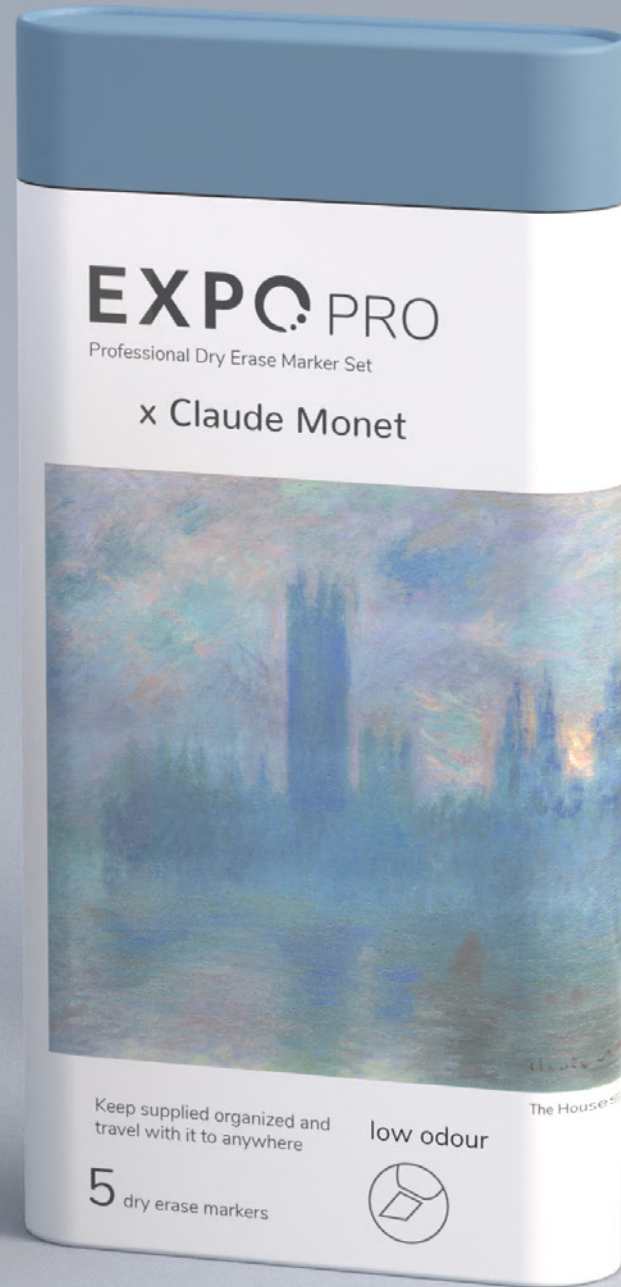
Thick



# Refill Dock












# Graphic Details

			
<p><b>EXPO PRO</b> Professional Dry Erase Marker Set</p> <p>x Claude Monet</p> 	<p>The Houses of Parliament, London, 1900</p>	<p><b>Product Information</b></p> <ul style="list-style-type: none"> <li>• For use on whiteboards, glass and most non-porous surfaces</li> <li>• If left uncapped for an extended period of time, recap for 24 hours and marker should recover</li> <li>• Store in horizontal position when not in use</li> <li>• Do not shake</li> <li>• Do not use on cloth</li> <li>• Recap when not in use</li> </ul> <p><b>Contents</b></p> <ul style="list-style-type: none"> <li>• 5 Assorted Low Odor EXPO Pro Dry Erase Markers</li> <li>• 1 EXPO Pro Marker Kit</li> </ul>	
<p>Keep supplied organized and travel with it to anywhere</p> <p><b>5</b> dry erase markers</p>	<p>low odour</p> 	<p>20869 MADE IN USA ©2020 NEWELL OFFICE BRANDS PRODUCT OF: NEWELL OFFICE BRANDS 6655 PEACHTREE DUNWOODY ROAD NE ATLANTA, GA 30328 www.expomarkers.com</p>  <p>Conforms to ASTM D-4236</p> <p><b>newell</b> BRANDS</p> <p>We would love to hear from you 1.800.346.3278</p>	 <p>0 705632 085943 &gt;</p>



# Graphic Details

**EXPO PRO**  
Professional Dry Erase Marker Set

x Bauhaus



Staatliches Bauhaus Ausstellung, 1923

**Product Information**

- For use on whiteboards, glass and most non-porous surfaces
- If left uncapped for an extended period of time, recap for 24 hours and marker should recover
- Store in horizontal position when not in use
- Do not shake
- Do not use on cloth
- Recap when not in use

**Contents**

- 5 Assorted Low Odor EXPO Pro Dry Erase Markers
- 1 EXPO Pro Marker Kit



Keep supplied organized and travel with it to anywhere

5 dry erase markers

low odour



20869  
MADE IN USA  
©2020 NEWELL OFFICE BRANDS  
PRODUCT OF:  
NEWELL OFFICE BRANDS  
6655 PEACHTREE DUNWOODY ROAD NE  
ATLANTA, GA 30328  
www.expomarkers.com



Conforms to  
ASTM D-4236



0 705632 085943




Conforms to  
ASTM D-4236



0 705632 085943

**EXPO PRO**  
Professional Dry Erase Marker Set

x Claude Monet



The Houses of Parliament, London, 1900

**Product Information**

- For use on whiteboards, glass and most non-porous surfaces
- If left uncapped for an extended period of time, recap for 24 hours and marker should recover
- Store in horizontal position when not in use
- Do not shake
- Do not use on cloth
- Recap when not in use

**Contents**


- 5 Assorted Low Odor EXPO Pro Dry Erase Markers
- 1 EXPO Pro Marker Kit




Keep supplied organized and travel with it to anywhere

5 dry erase markers


low odour



20869  
MADE IN USA  
©2020 NEWELL OFFICE BRANDS  
PRODUCT OF:  
NEWELL OFFICE BRANDS  
6655 PEACHTREE DUNWOODY ROAD NE  
ATLANTA, GA 30328  
www.expomarkers.com



Conforms to  
ASTM D-4236



0 705632 085943



Conforms to  
ASTM D-4236



0 705632 085943

**EXPO PRO**  
Professional Dry Erase Marker Set

x Vincent van Gogh



Cafe Terrace at Night, 1889

**Product Information**

- For use on whiteboards, glass and most non-porous surfaces
- If left uncapped for an extended period of time, recap for 24 hours and marker should recover
- Store in horizontal position when not in use
- Do not shake
- Do not use on cloth
- Recap when not in use

**Contents**

- 5 Assorted Low Odor EXPO Pro Dry Erase Markers
- 1 EXPO Pro Marker Kit



Keep supplied organized and travel with it to anywhere

5 dry erase markers

low odour



20869  
MADE IN USA  
©2020 NEWELL OFFICE BRANDS  
PRODUCT OF:  
NEWELL OFFICE BRANDS  
6655 PEACHTREE DUNWOODY ROAD NE  
ATLANTA, GA 30328  
www.expomarkers.com



Conforms to  
ASTM D-4236



0 705632 085943



Conforms to  
ASTM D-4236



0 705632 085943

# Concept 2



Institutions/  
Corporates

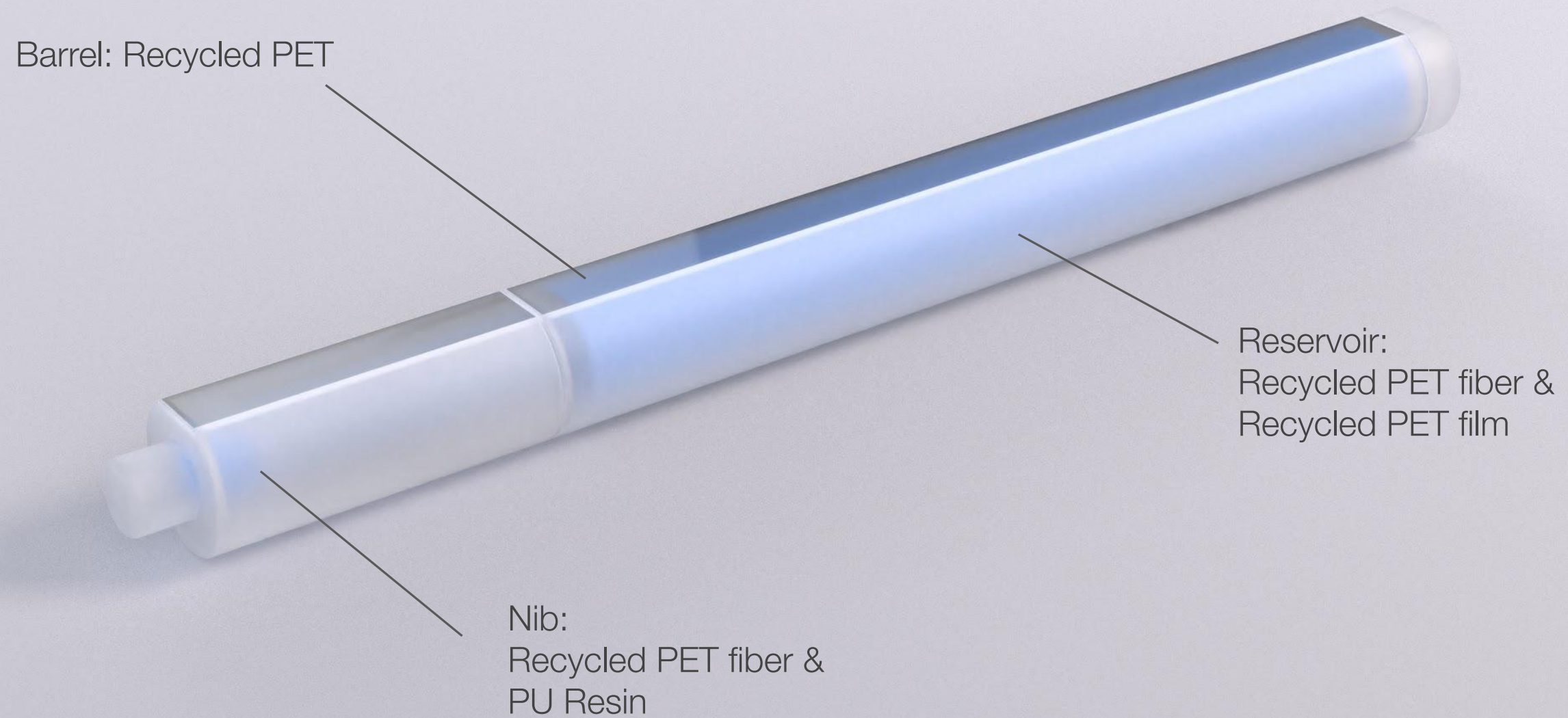


# Expo Collective

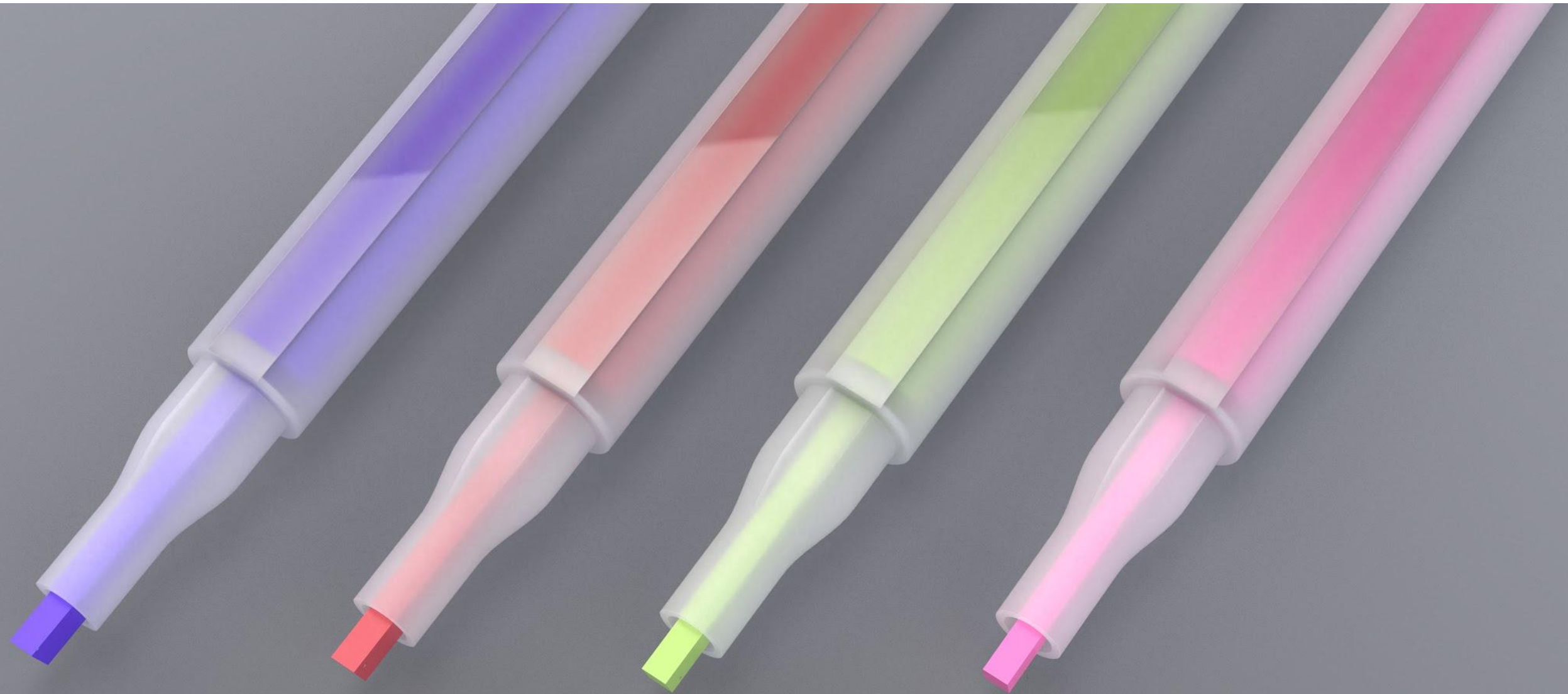
A system for easy institutional recycle and reorder.



# Chisel Tip Dry Erase Marker



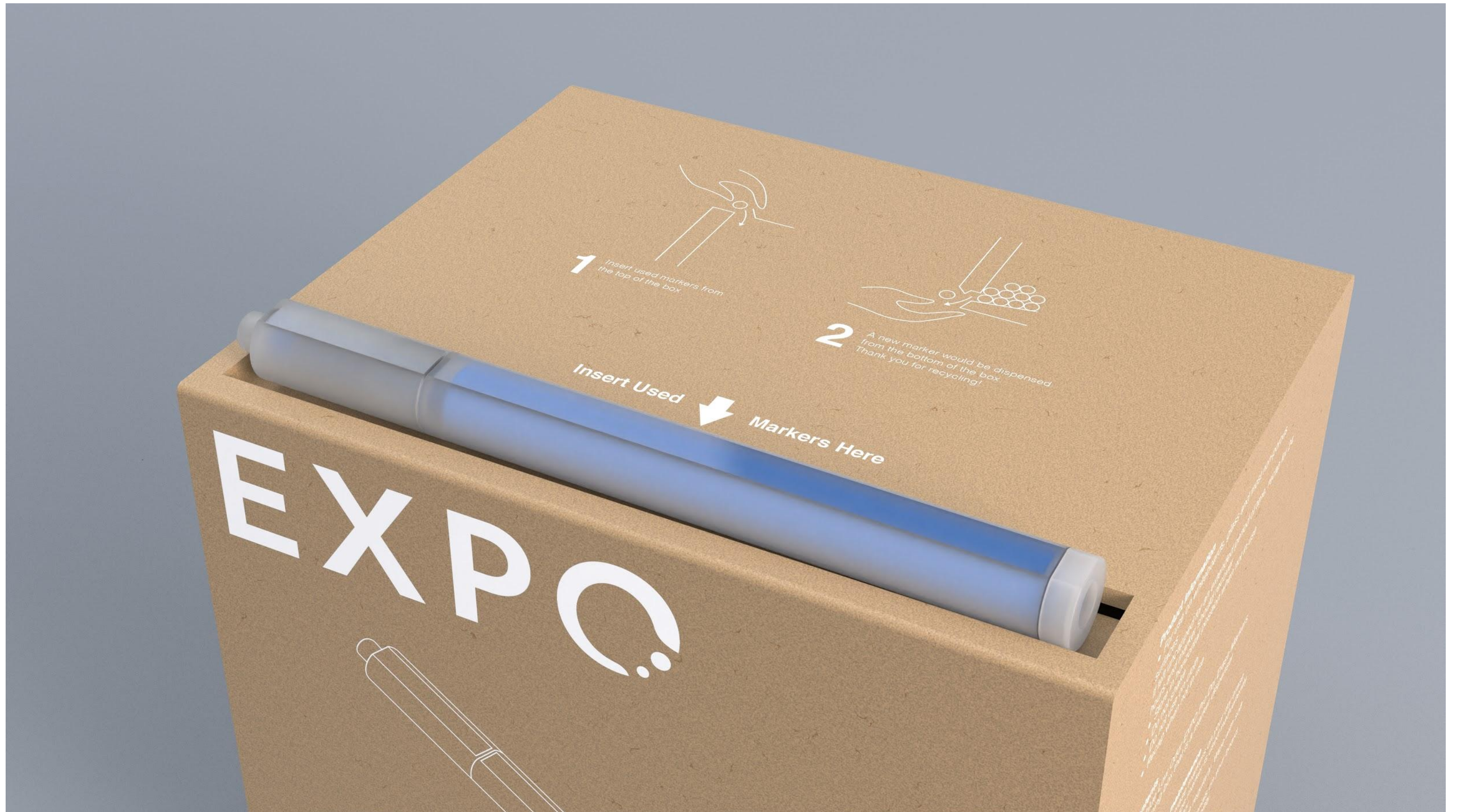




## One Body For All Colors

- Recycle without sorting
- No printing on barrels

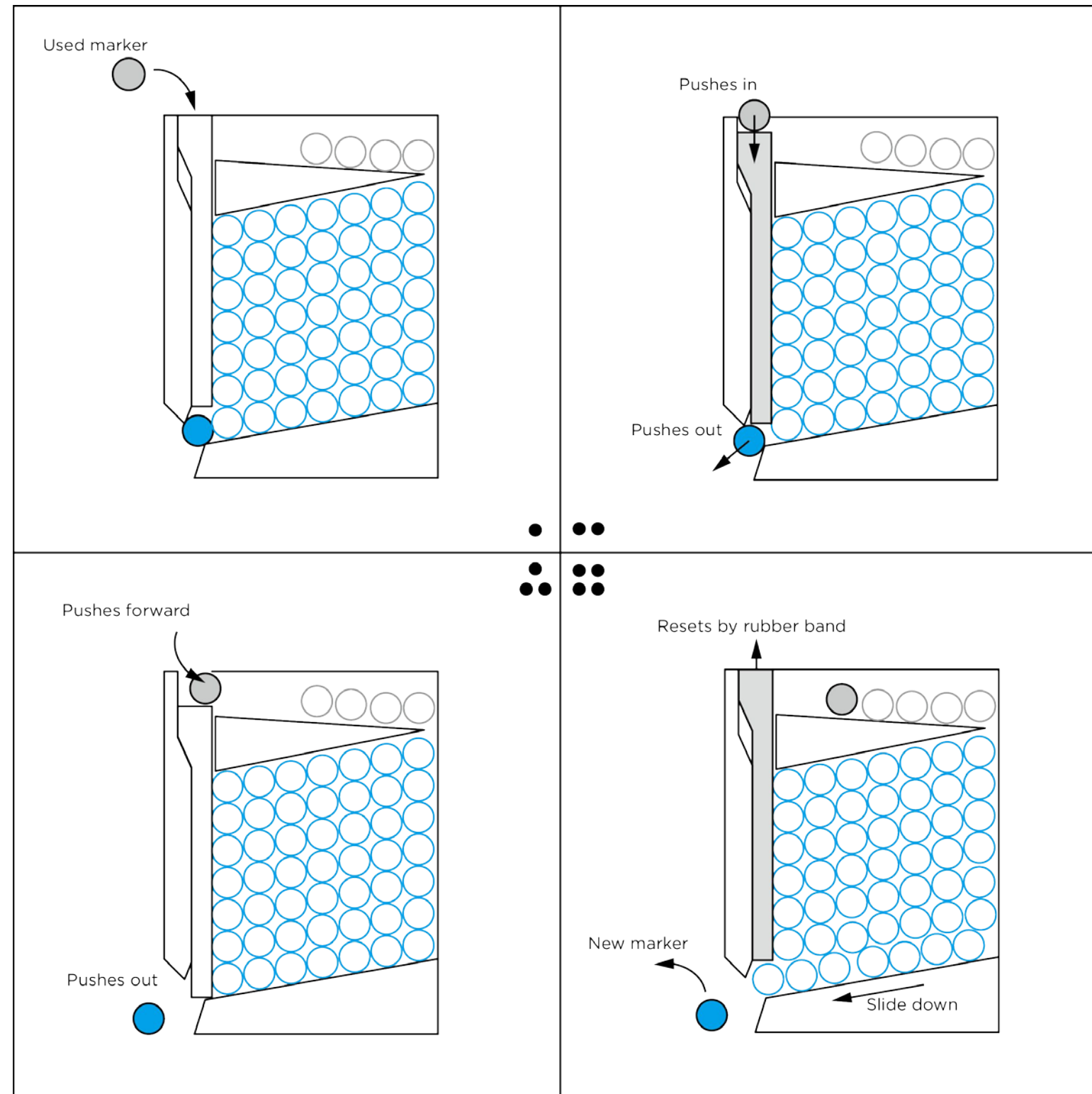




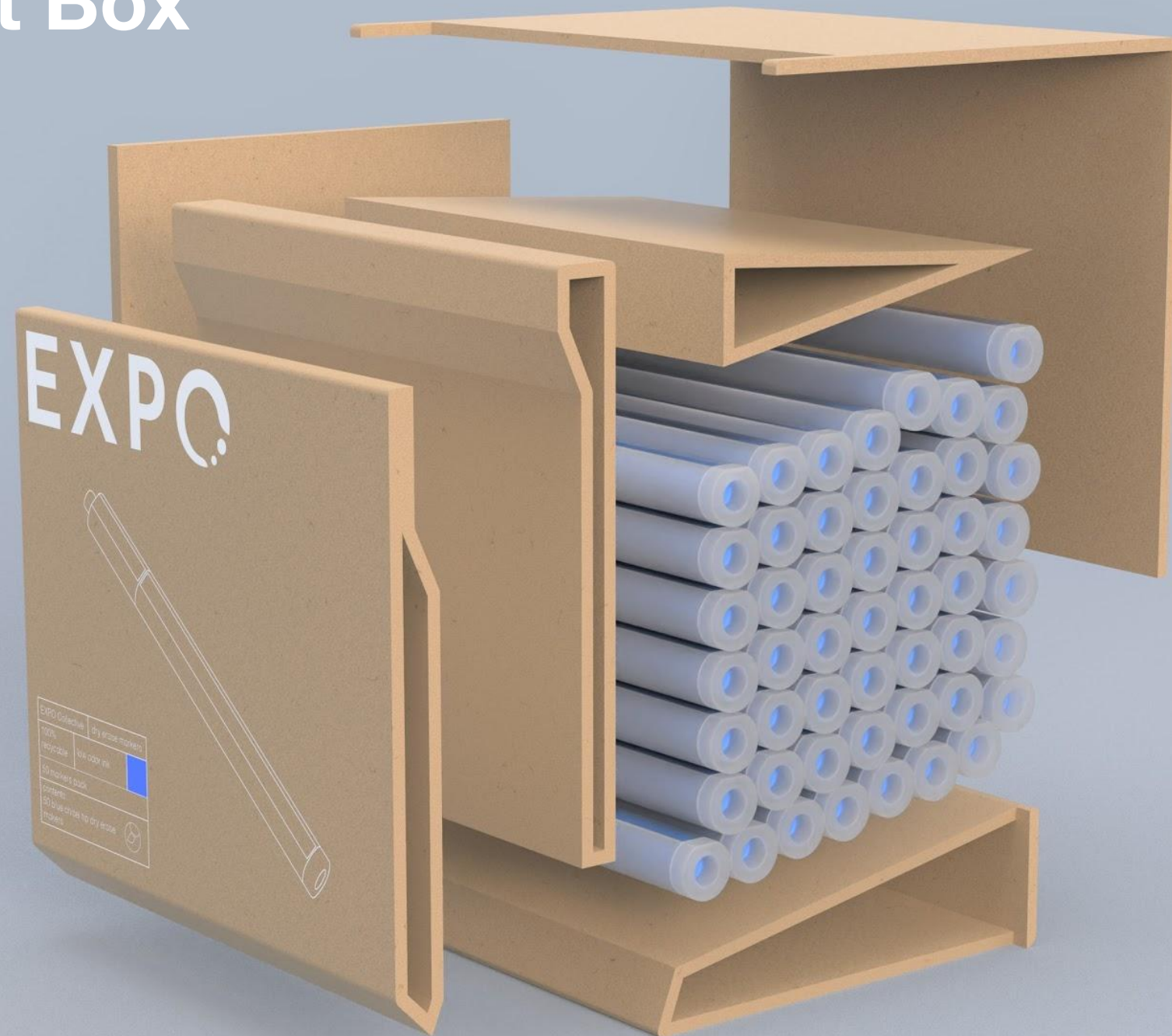


# Marker exchange

Incentive for recycling

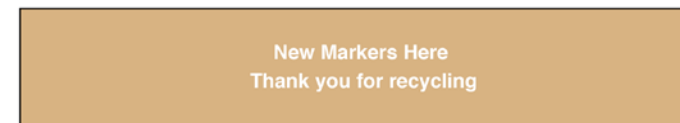
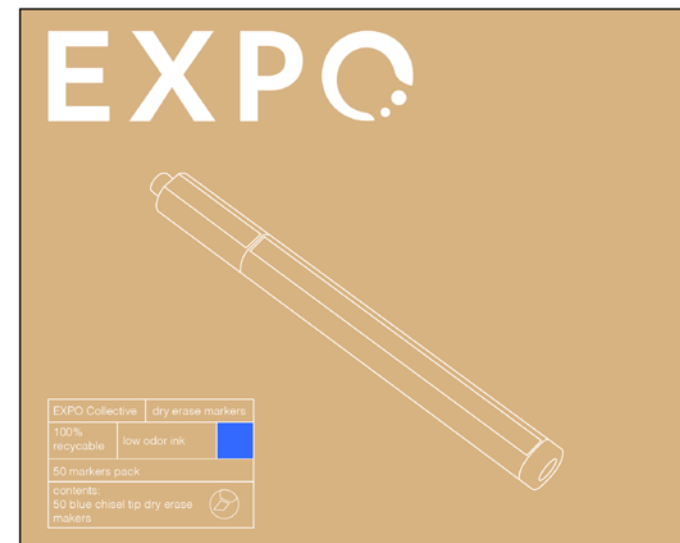
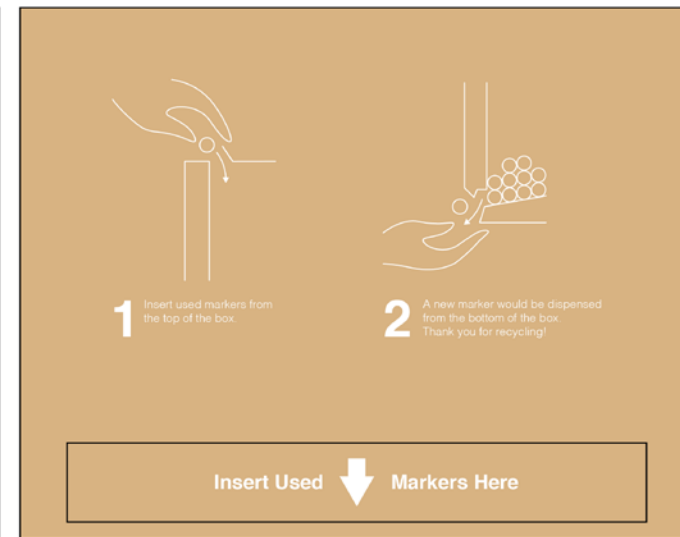


# Expo Collect Box





# EXPO Collect Final Packaging Design Overview



# EXPO Collect Final Packaging Design Peel Off Shipping Label



The image shows a brown cardboard box with a white shipping label affixed to its top surface. The label contains shipping information for a 2 LB package, including the sender's address (NEWELL BRANDS.COM, 1770 4th 7000, 6655 PEACHTREE DUNWOODY RD., ATLANTA, GA 30328), the recipient's address (SHIP TO: PRODUCT DESIGN 6, NEWELL SPONSORED CLASS, ART CENTER COLLEGE OF DESIGN, 1700 LIDA ST., PASADENA, CA 91103), a QR code, a tracking number (TX 751 9-04), and a UPS GROUND service label with tracking number 1Z A43 52F 03 9254 0705. Below the main label, there is a section for return instructions and a return label with a barcode and reference numbers (Tx Ref No.: R6388323, Reference No. 2: Lot: 5942569, Log: Multiple, R6388323, NYSB 63.DA.10/0517).

**Once the box of new markers are used and the box has been filled with used markers, the package is qualified for a free return.**

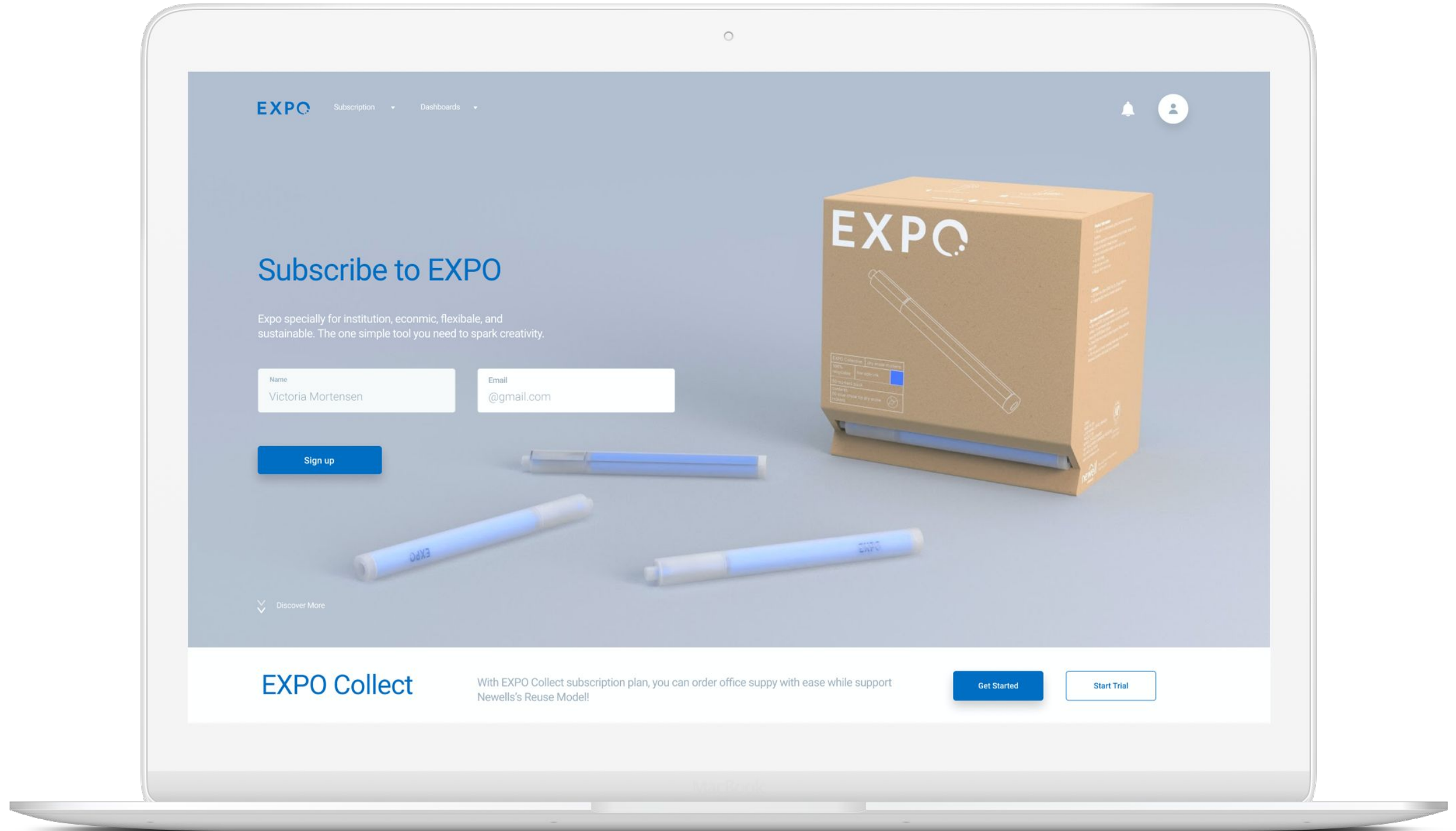
**For Return:**  
Peel off the initial shipping label, ship directly with the return label without any additional cost.



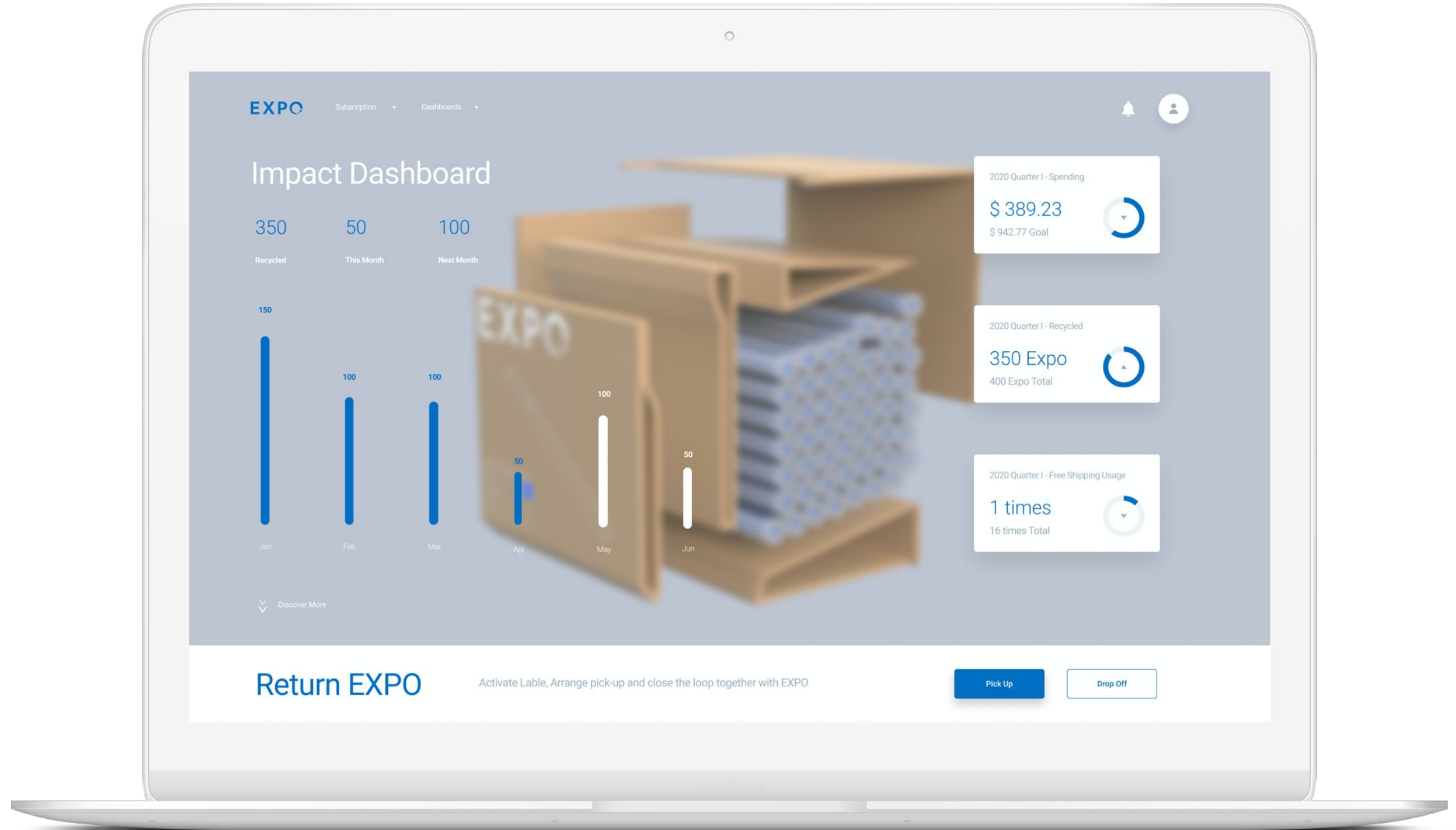
**THIS SIDE UP**



# EXPO Collective Web Page Final Concept

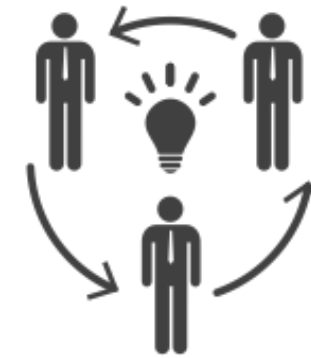
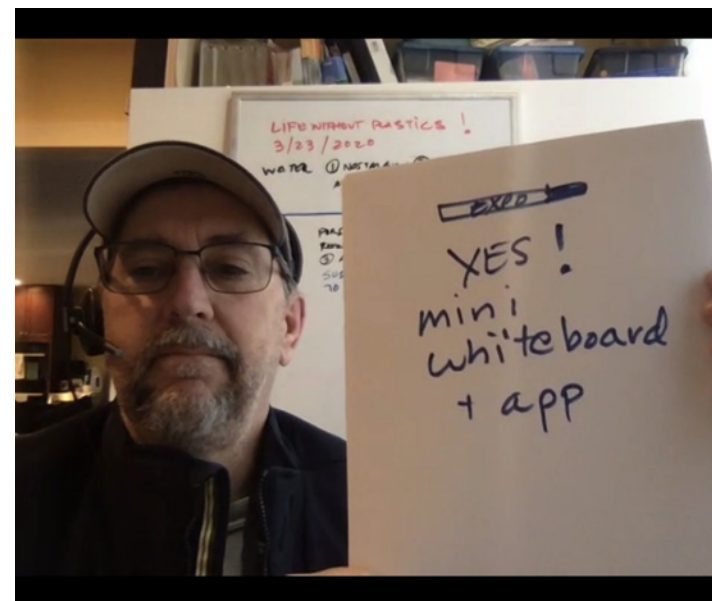


# EXPO Collective Web Page Final Concept





# Concept 3



Remote working

# Expo Remote

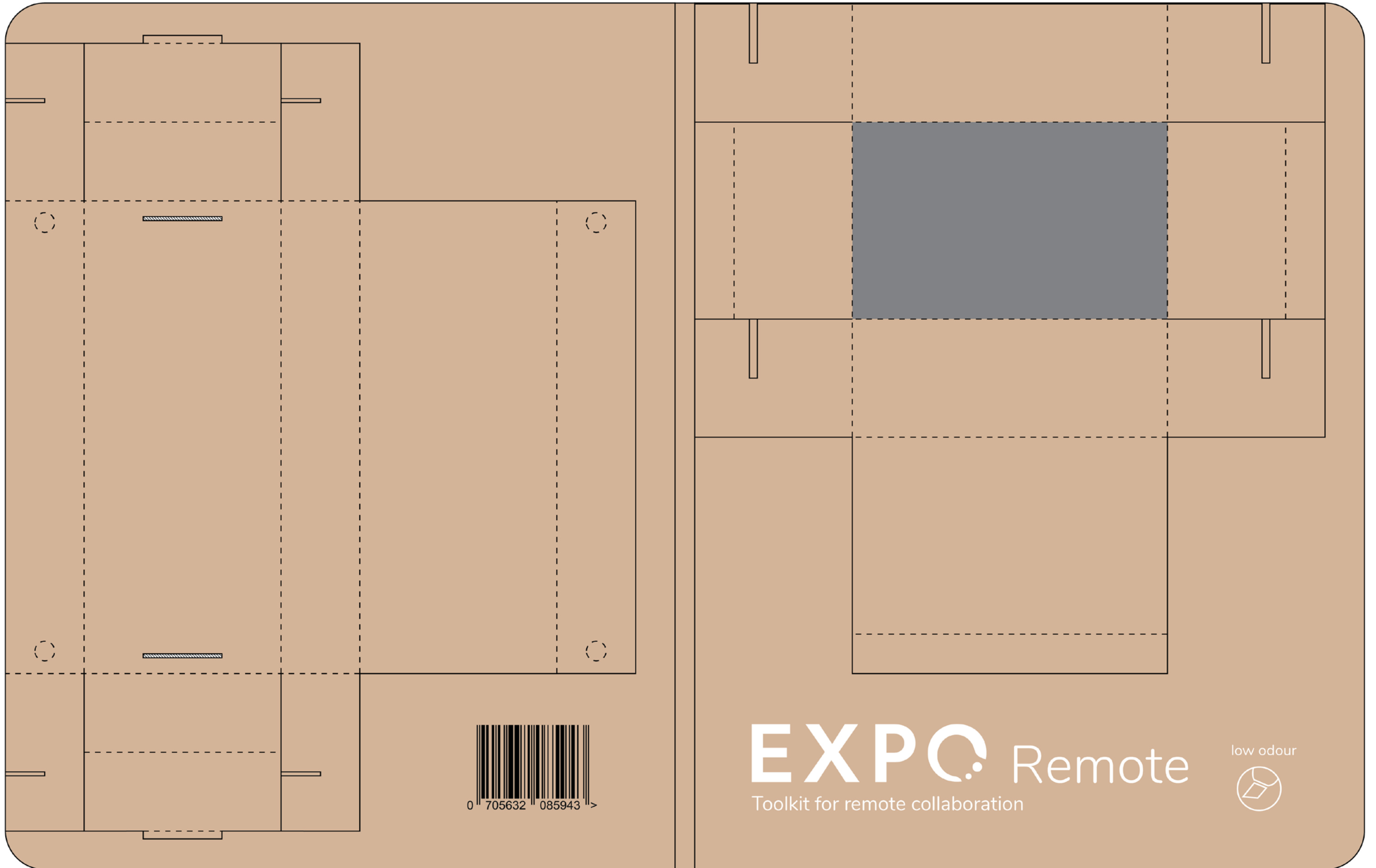
A set of products to support remote communication & collaboration.







- Whiteboard, eraser and 4 markers
- Expo app for scanning, organizing, sharing and collaboration



**EXPO** Remote  
Toolkit for remote collaboration

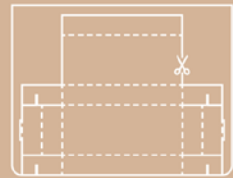




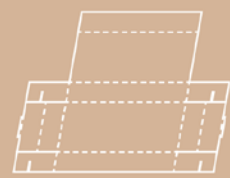
EXPO

Assemble  
Instructions:

1



2



3



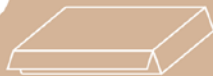
4



5



6



20869  
MADE IN USA  
©2020 NEWELL OFFICE BRANDS  
PRODUCT OF:  
NEWELL OFFICE BRANDS  
6655 PEACHTREE DUNWOODY ROAD NE  
ATLANTA, GA 30328  
www.expomarkers.com

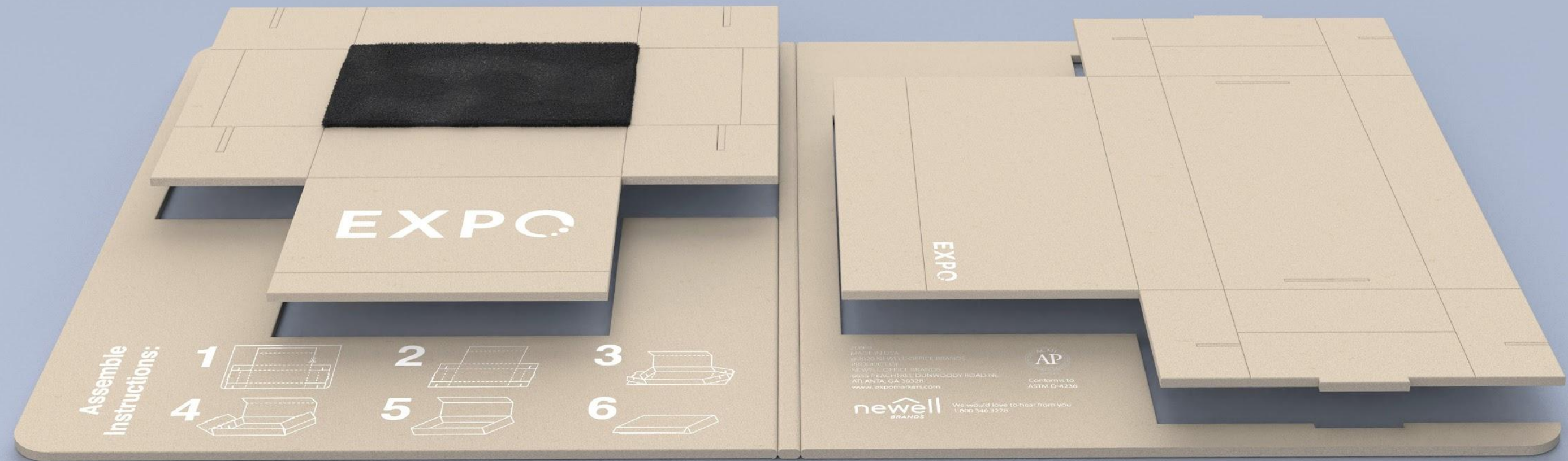


Conforms to  
ASTM D-4236

**newell**  
BRANDS

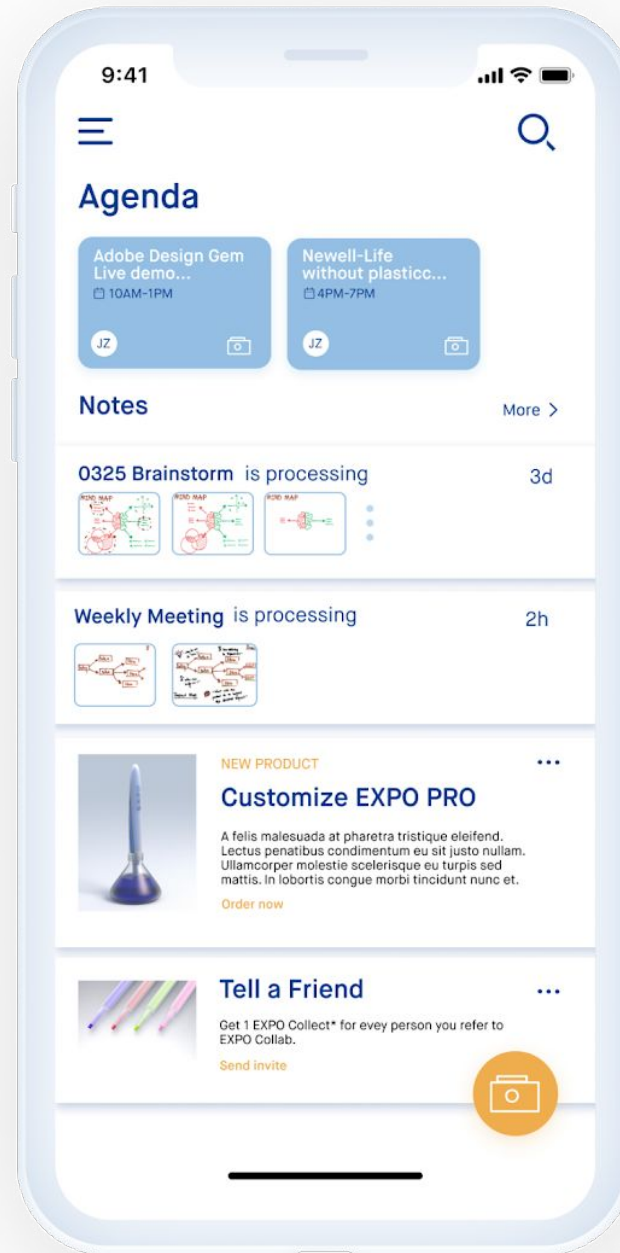
We would love to hear from you  
1.800.346.3278

# Flat Package Minimal Shipping

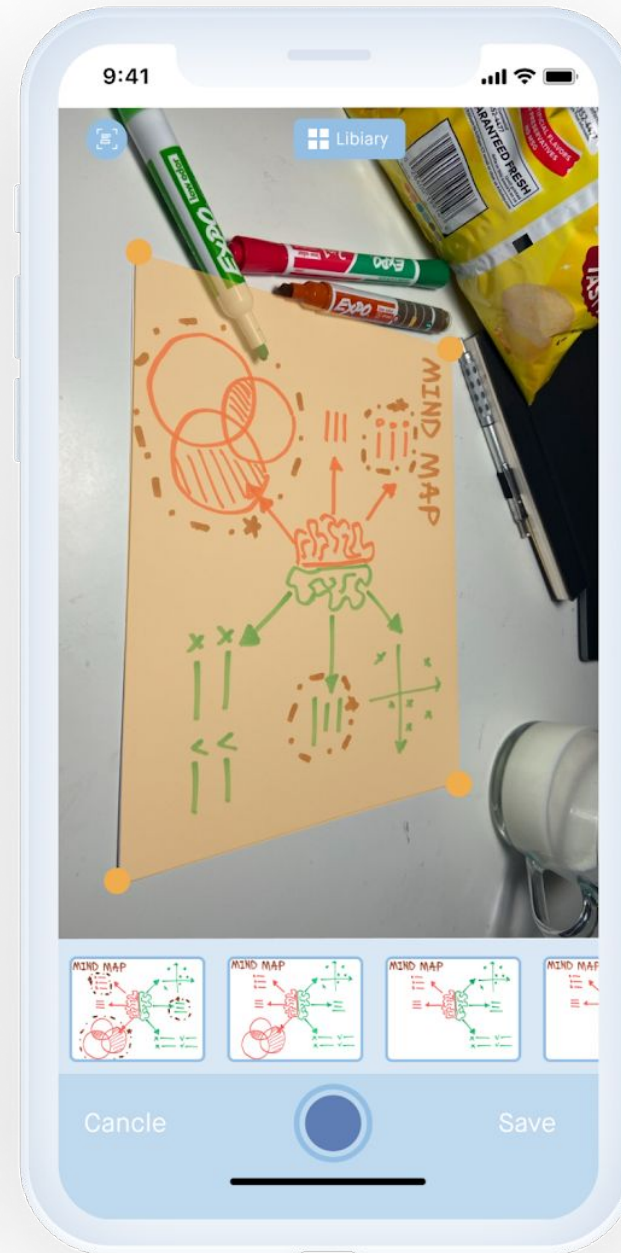




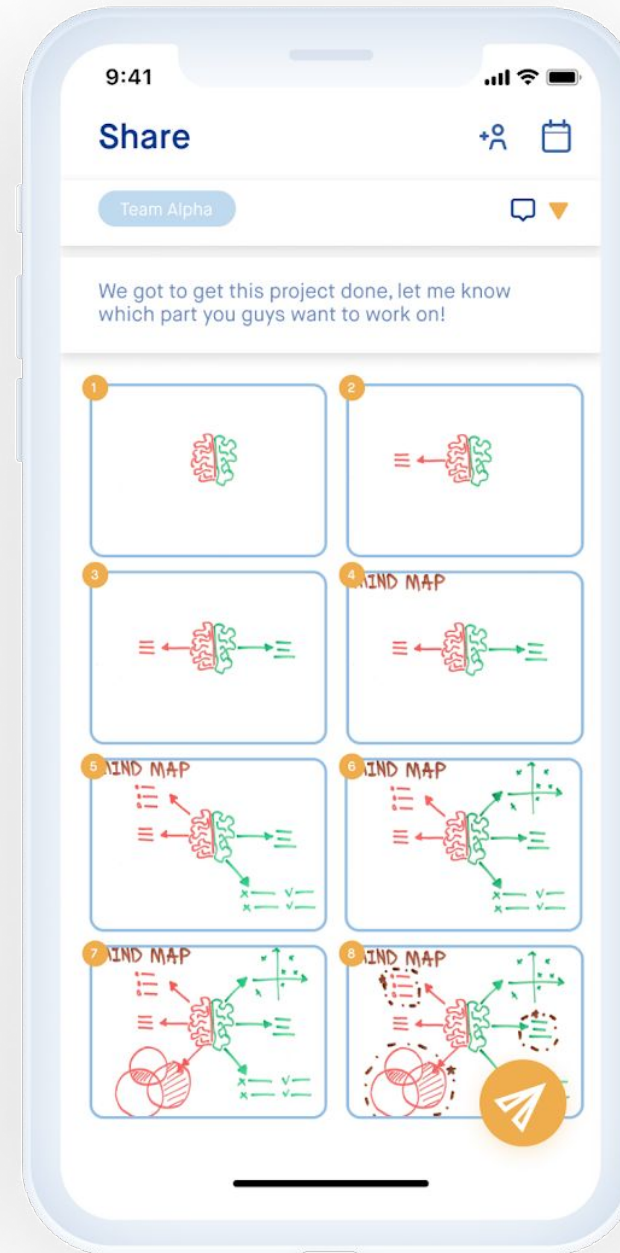
# Expo App



Home



Scan

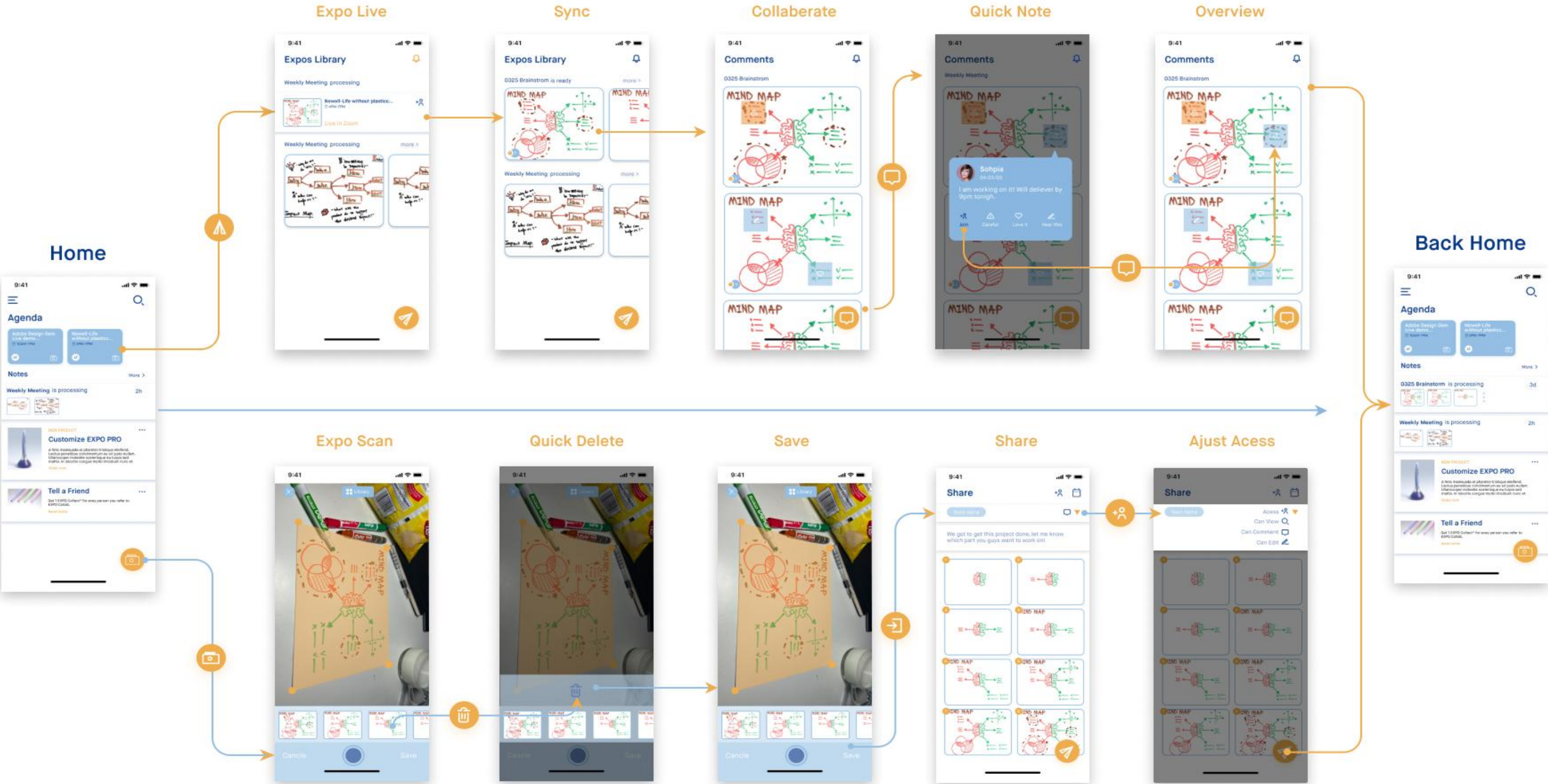


Share



Collaboration

# Wire Flow





# EXPO







thank you ☺

Team Rainbow

Vivian Chen, Michael Zhu, Yuning Tang, Connie Zhou