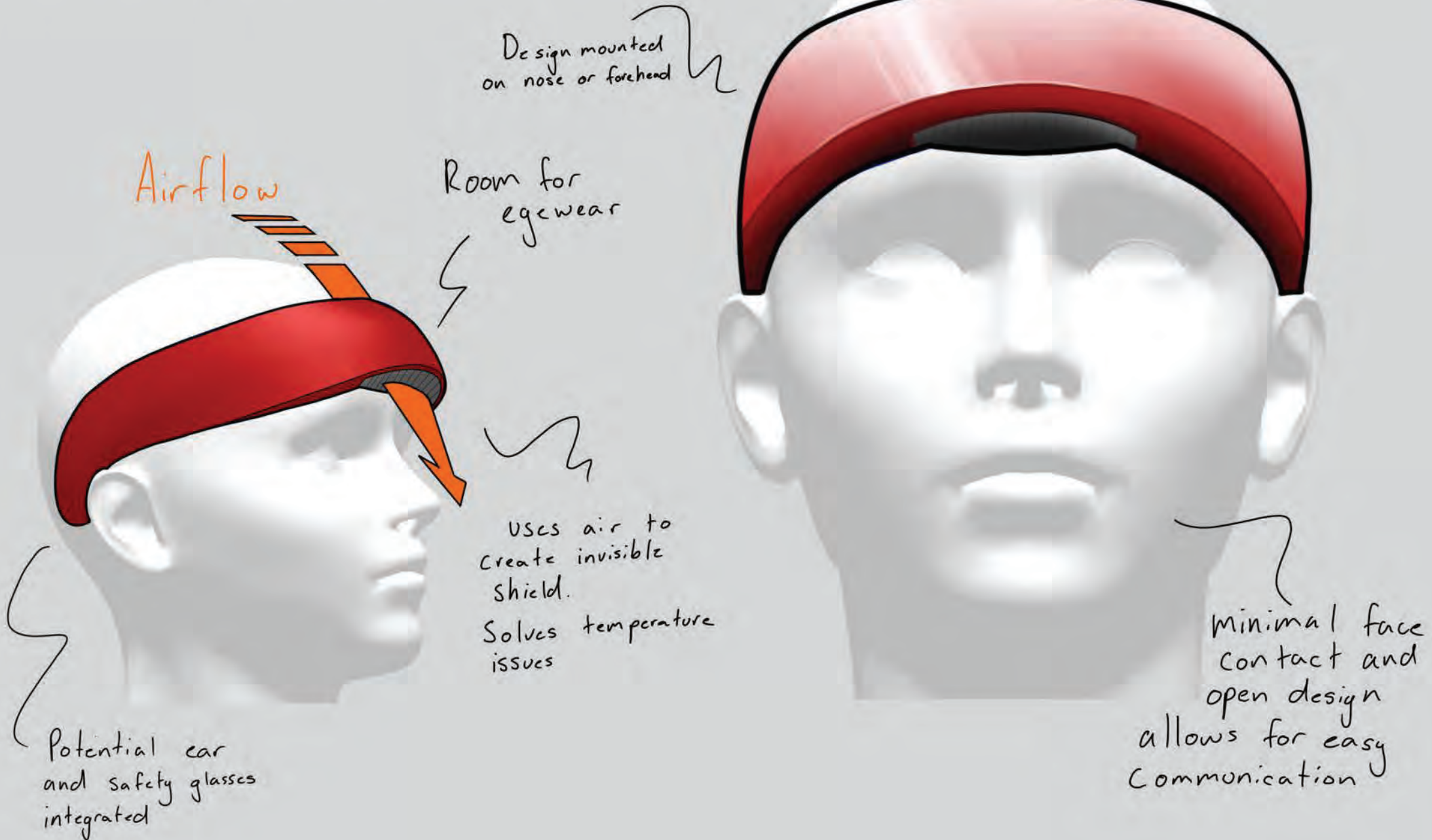


Week 8

CONCEPT 1



CONCEPT 2

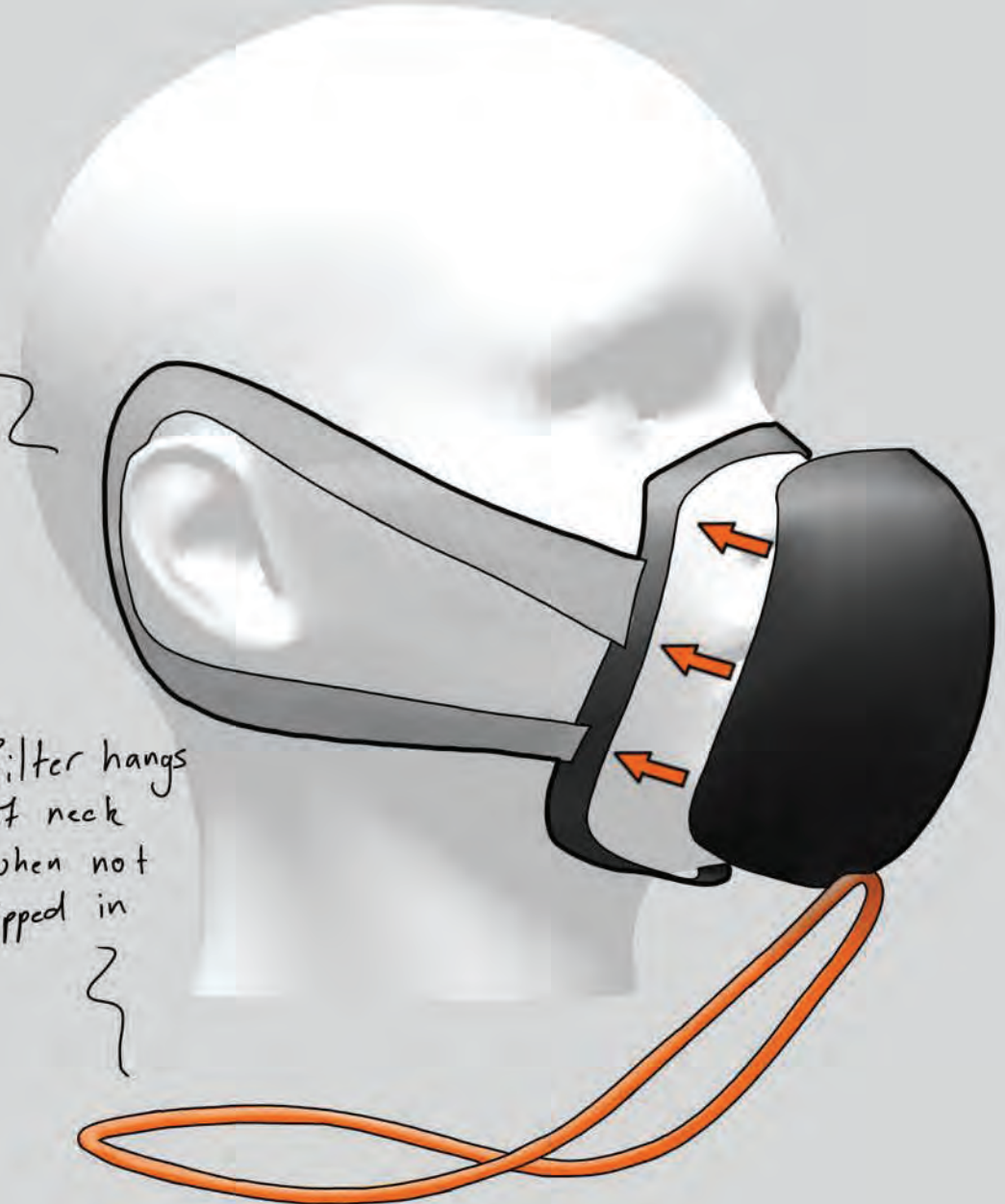


filter magnetise
to face mask

Minimal strap
design. cloth
combats heat

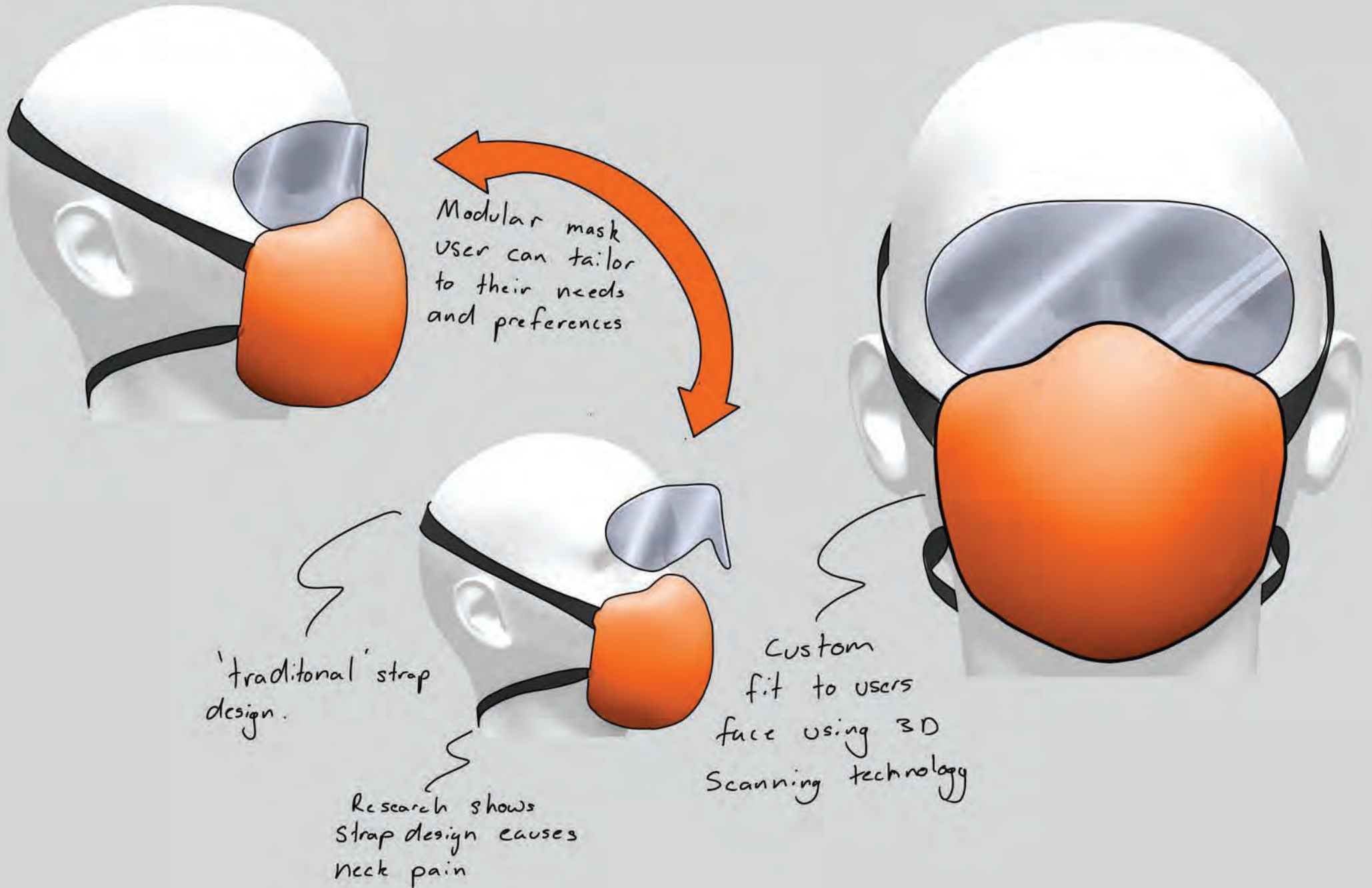


filter hangs
of neck
when not
clipped in



Removeable
filter on face
mask to allow
quick relief when
needed

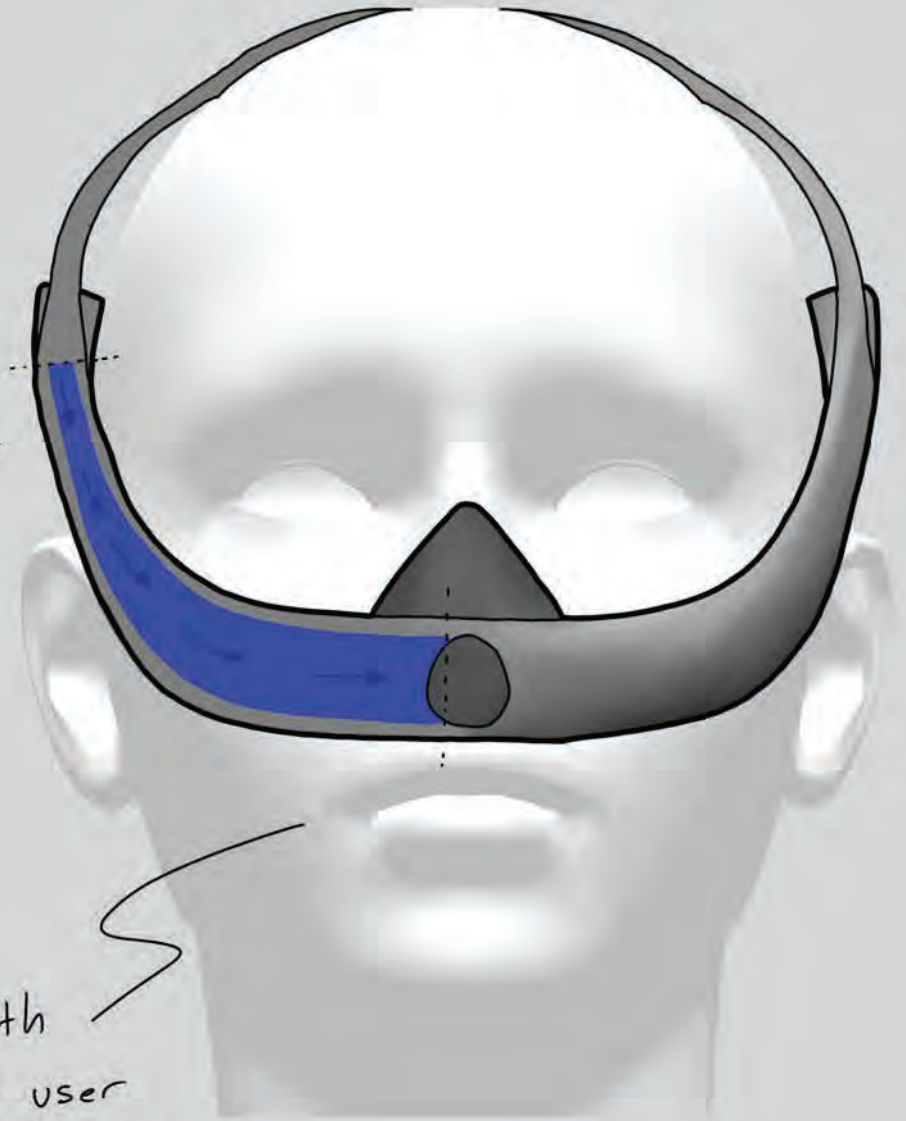
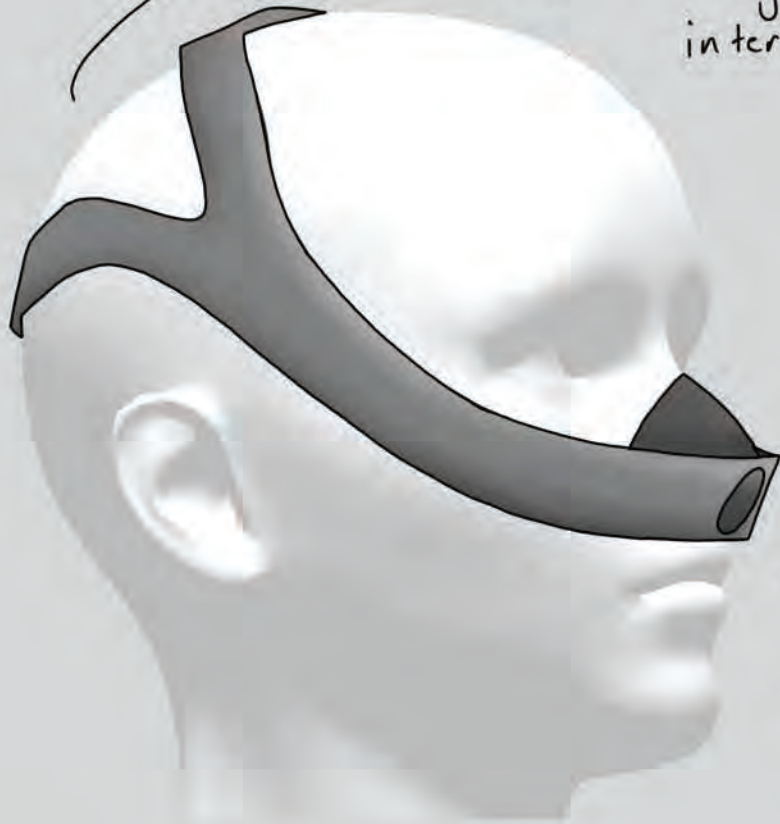
CONCEPT 3



CONCEPT 4

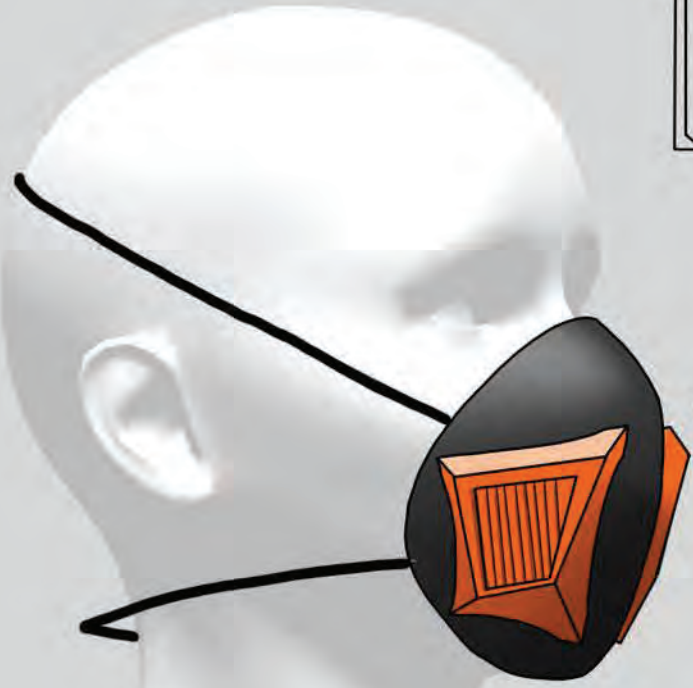
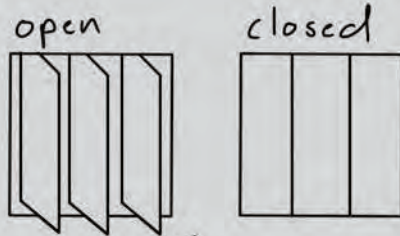
Straps distribute weight evenly and holds head to prevent slippage

Air intake along tubing with internal filter



Open mouth design allows user to stay protected by breathing through nose

CONCEPT 5



Design allows
for open breathing
when safe, can
be closed when
needed



TITLE : lit review

WEEK : 6

PAGE : 79

RELATED PAGES/RESEARCH:

lit review summary

Physiological effects

- increased heart rate
- increased blood pressure
- 7.5 degree anterior face temp
↳ Australian heat
- thermal stress
- Respiratory stress
- personal procedures (sneezing and eating)
- vision (obstructed / tunnel)
- discomfort

psychological effects

- feeling of well being
- Communication → clear face piece?
- discomfort
- anxiety
- Stress
- inconvenience

5 designs

- economical
- futuristic
 - Sci fi?
 - modular
 - Beard
 - convenient
 - positive pressure
- full face
- near future

DARCY DUCKWORTH

Week 9

TITLE : Concepts

WEEK : 9

PAGE : 76

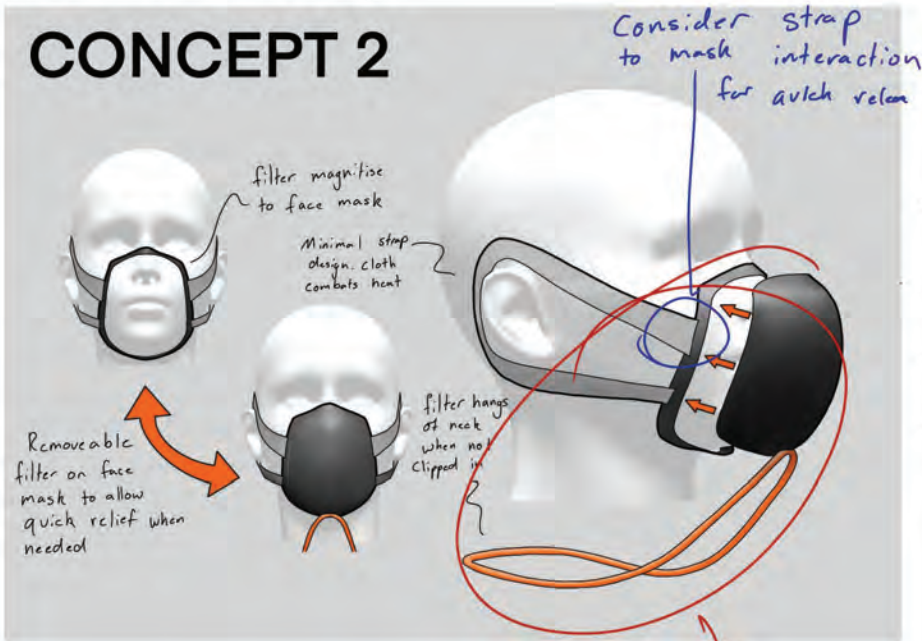
- user interaction
- Aesthetics
- Materials
- form

RELATED PAGES/RESEARCH:

Key research

- Discomfort ——— 3D scanning
- adjustment ——— facefit, straps, uncomfortable
- temperature ——— Heat build up
- inconvenience ——— Straps take too long on/off

CONCEPT 2



- Discomfort solved by 3D scanning
- adjustment, strap design needs improving
- temperature heat build up
- inconvenience strap on/off

once set up is there an issue?

- quick on/off release
- removeable vents/covers

3m cool flow 1way valve

Cool flow valve



underlying theme

↳ quick on/off of respirator

↳ convenience

Removing cover means seal design and mechanism,

Can mask be removed at strap point

DARCY DUCKWORTH

TITLE : exhibition
WEEK : 9
PAGE : 75

RELATED PAGES/RESEARCH:

White paint splatter to emulate dust? → clear spray for texture splatter

white acrylic etched in text

construction tools + spilled paint? around display?

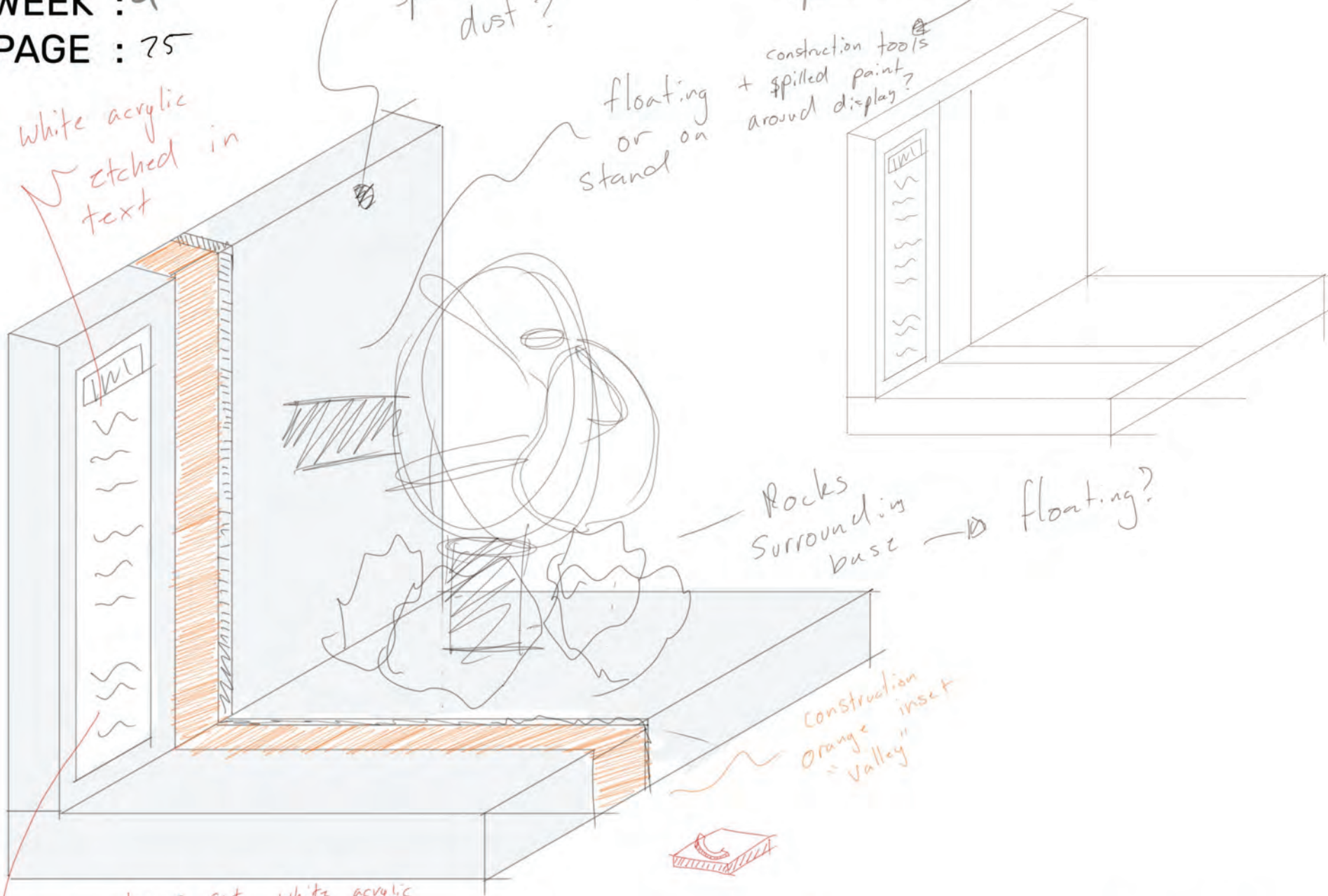
floating or on stand

Rocks surrounding base → floating?

construction orange "valley" inset

laser cut white acrylic + laser cut text pushed into acrylic

black text raised above white acrylic



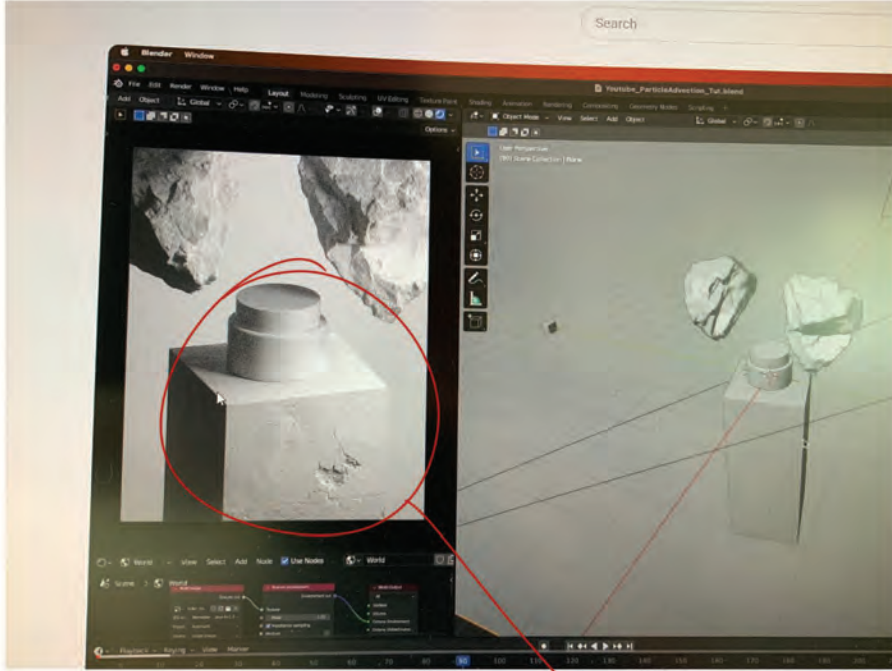
DARCY DUCKWORTH

TITLE : renderers

WEEK : 9

PAGE : 76

RELATED PAGES/RESEARCH:



Strapp harness
seperates from
main body.
likely for manufacturing
reasons.



final render
inspiration

vac formed model
to v. at home
for form study

DARCY DUCKWORTH

TITLE : usability

WEEK : 9

PAGE : 77

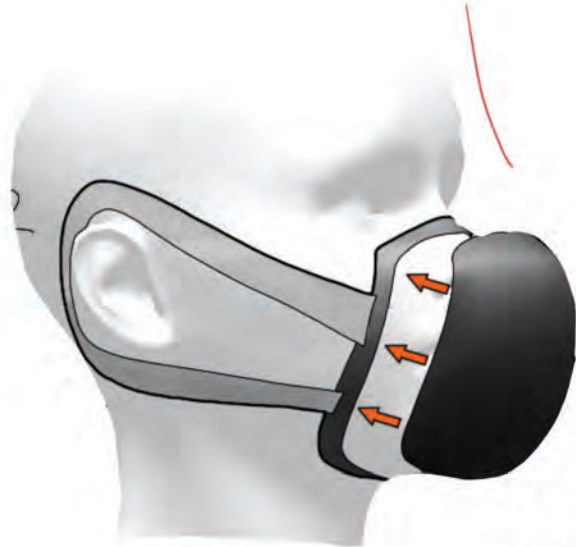
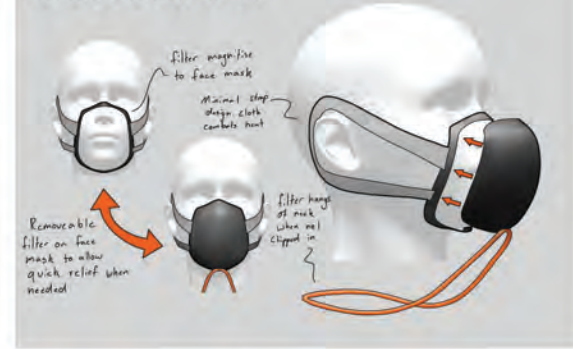
RELATED PAGES/RESEARCH:

Removeable filter

#1

#2 Quick on/off with whole mask

CONCEPT 2

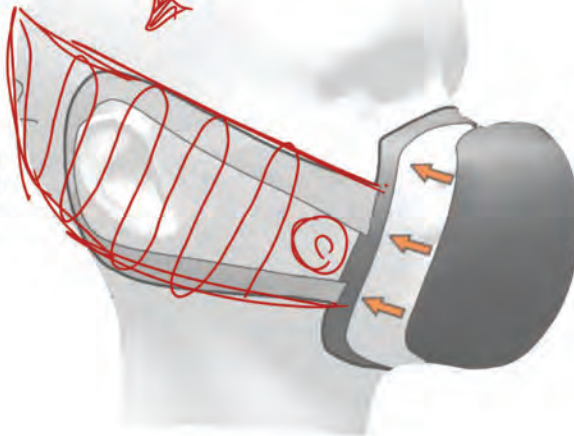


#3



• Wrap around head rather than putting mask over head

#4



Bike helmet adjustment and apple vision pro share same tightening concept.



DARCY DUCKWORTH

TITLE : brand awareness

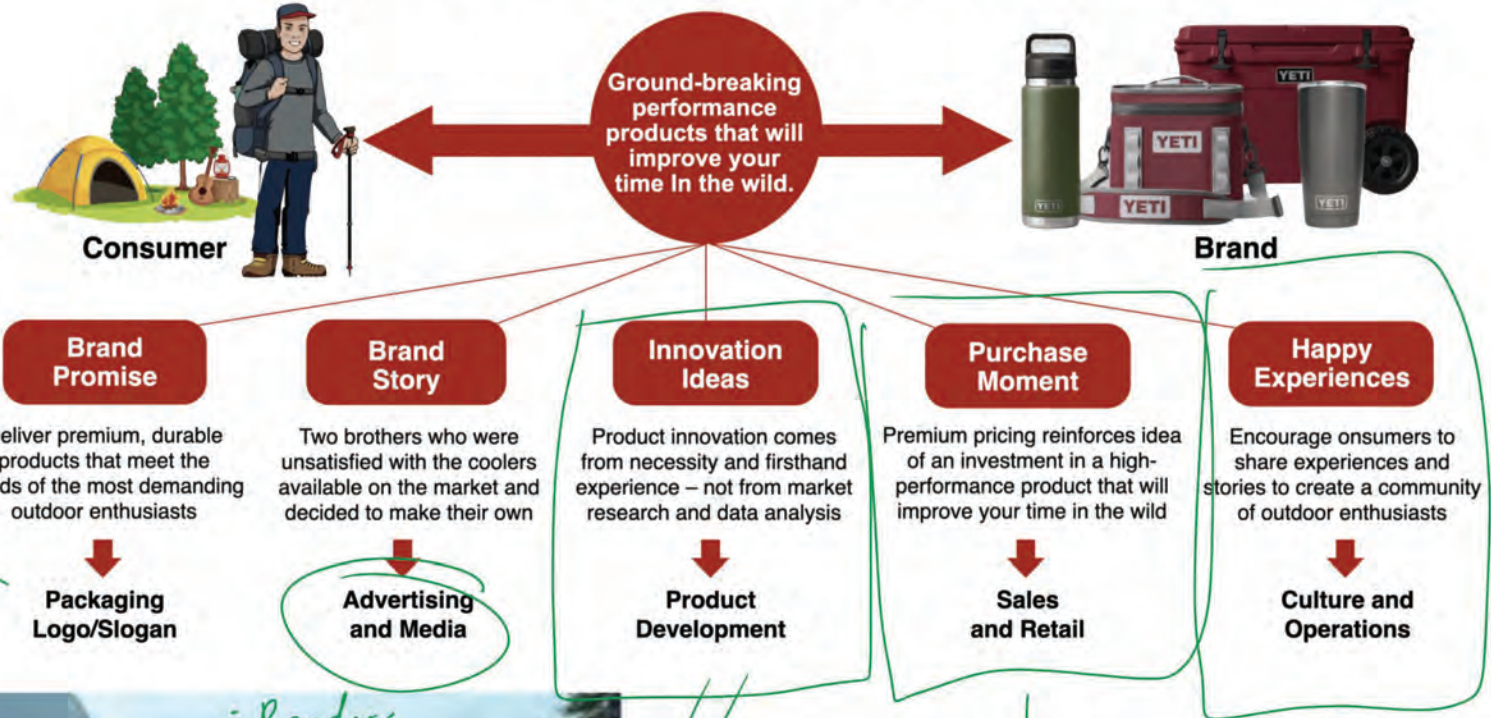
RELATED PAGES/RESEARCH:

WEEK : 9

PAGE : 78

YETI brand idea map

ACME brand
Safest mask is the mask the user chooses to wear.



- Renders
- Product vis

informed by user issues

get more user feedback

reinforced by brand association i.e. tradies buying hilux utes

Social status

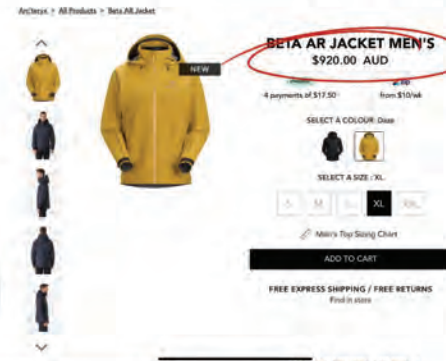
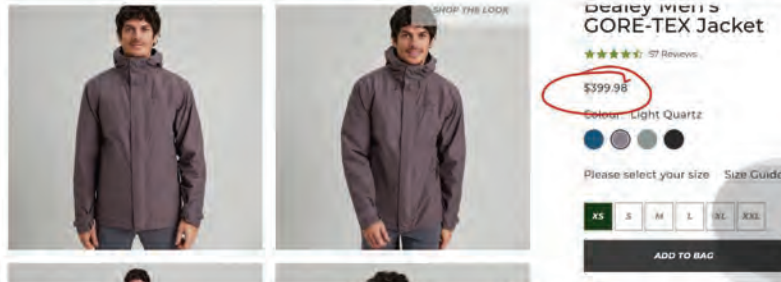
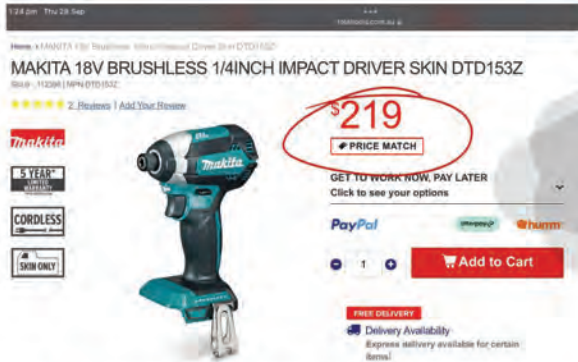
↳ is it 'cool' to be safe?

Peer to peer sales word of mouth

DARCY DUCKWORTH

TITLE : brand awareness
 WEEK : 9
 PAGE : 79

RELATED PAGES/RESEARCH:



\$400
 \$200 →

VS
 \$400 → \$920

\$600
 \$160 →

My design will have social status, mid-high manufacturing costs, should be far superior to 3M. not scared to use advanced manu processes ie 3D printing

Price

ME

3M

• Ancho

• Yeti

• Korthmann

• Milwaukee

• other = Makita

Qualito

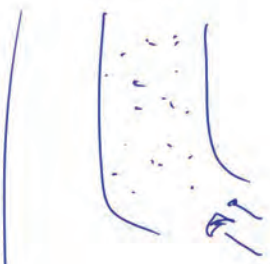
TITLE : lattice research

WEEK : 9

PAGE : 80

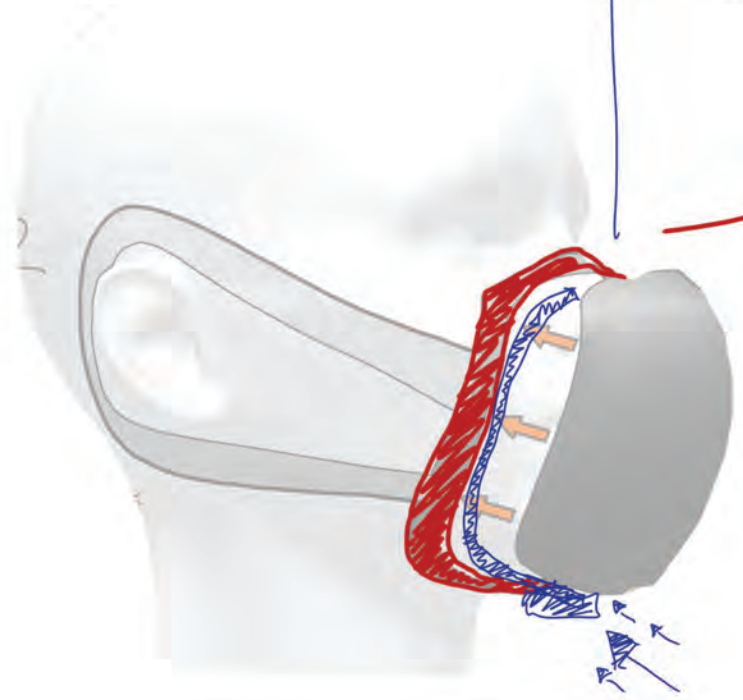
RELATED PAGES/RESEARCH:

Can you use channels of air flow to carry out heat on an exhale



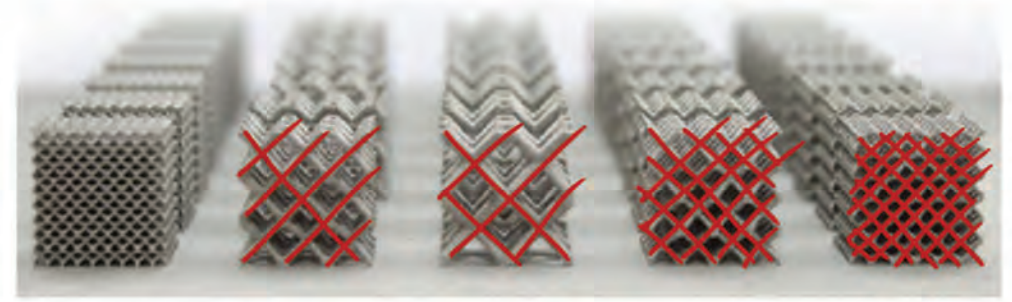
Rubber

Side profile



3D print

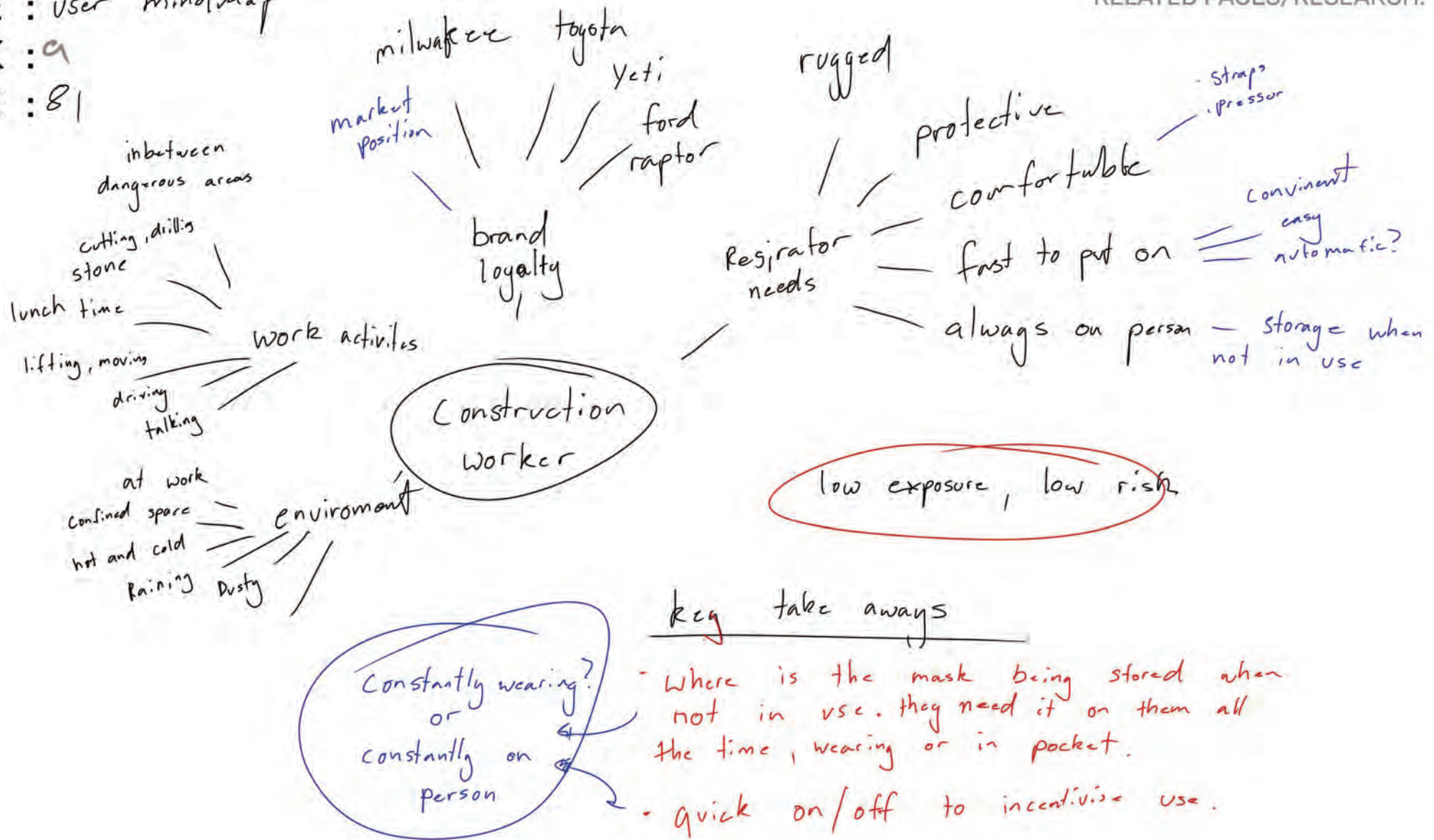
use lattice structure to create cushioning to replace rubber?



DARCY DUCKWORTH

TITLE : user mindmap
WEEK : 9
PAGE : 81

RELATED PAGES/RESEARCH:



TITLE : user research

WEEK : 9

PAGE : 82

Workshop feedback

• 3m design hanging on neck would be annoying for more than a few minutes

• Minimise design for lighter weight

↳ Don't need dual filter as respirator isn't seeing heavy use

Mask should always be easy and close to user for convenience.

Mask should be as easy as putting glasses on head and putting over eyes again

Respirator sits very close under chin.
Not good for wearing on neck for long time.
or confined spaces



flick latch upward to release strap tension

Pull mask down to increase tension and adhere to face



TITLE : mechanism

WEEK : 9

PAGE : 83

RELATED PAGES/RESEARCH:

easily accessible when on neck



bluetooth music
PPE earbuds sit
on neck

black diamond magpul
magnetic gate, like
fox helmet



bulky
hangs around
neck
restricts neck
movement.
not comfortable



hangs low on
neck

could resp fit
in top pocket?

• is there a device they can
wear around ears/back of
head the light
weight mask can clip
onto

DARCY DUCKWORTH

TITLE : VR concepts

WEEK : 9

PAGE : 94

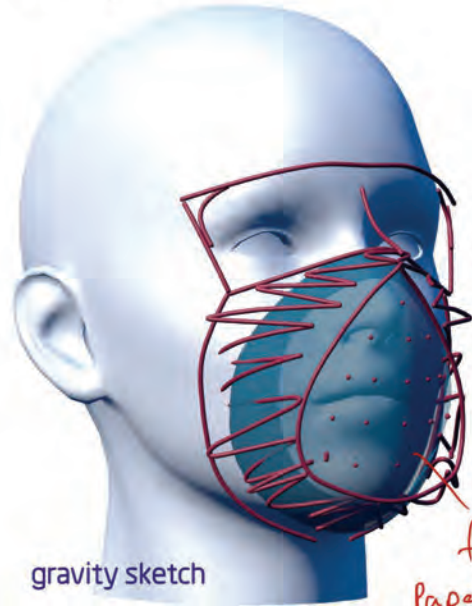
RELATED PAGES/RESEARCH:



gravity sketch

Basic template of rubber seal / protruding from face. to proportion

↓
used to sketch over in VR for external form of mask and straps



gravity sketch

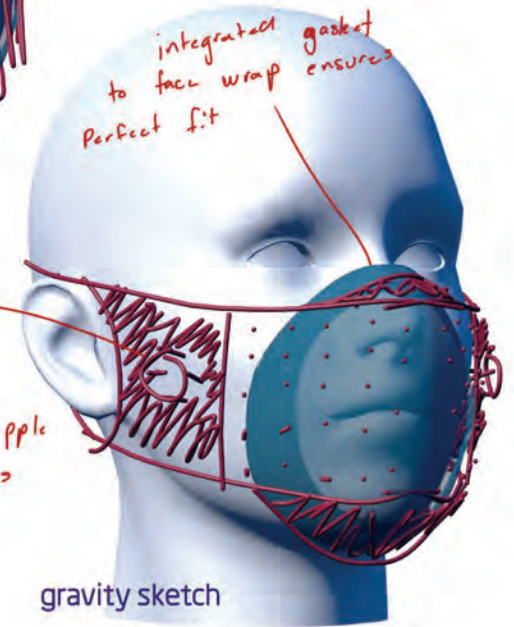
integrated glasses
filter paper at front of mask



gravity sketch

moon shaped strap guides to minimise pressure on ears

mesh wraps around face to 'hug' filter in place



gravity sketch

dial tightens or loosens face mask. like apple vision vr goggles or bike helmet adjuster

integrated gasket ensures perfect fit

TITLE : vr concepts

WEEK : 9

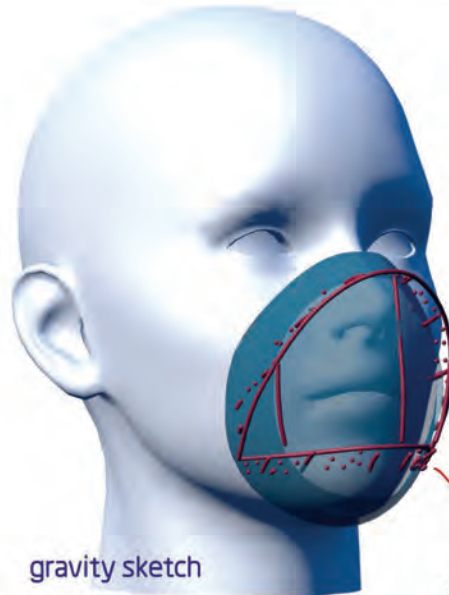
PAGE : 85

RELATED PAGES/RESEARCH:



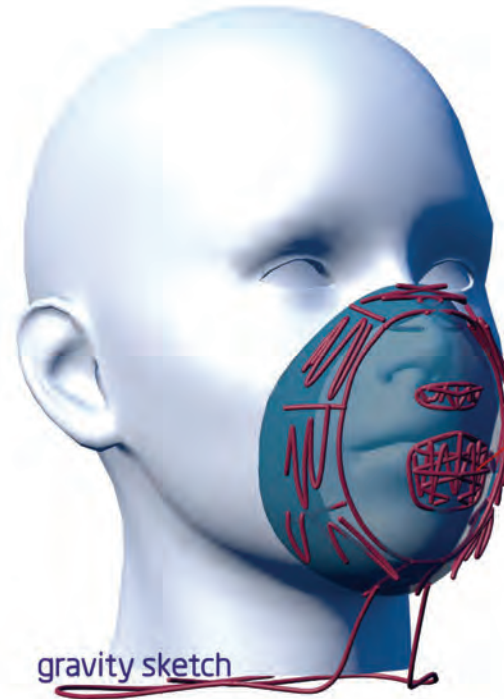
one way valve to reduce hot air loitering in mask.

Air flow from sides of mask which will draw fresh air over the cheeks to reduce ambient temperatures



gravity sketch

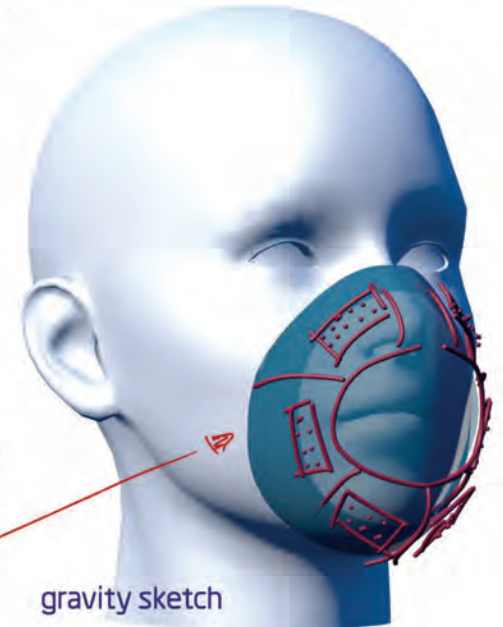
Draws oxygen from all directions to unrestricted airflow and help users breath easier



gravity sketch

intake filtered vents around all of mask to increase air volume to lungs

quick exhale one way valves



gravity sketch

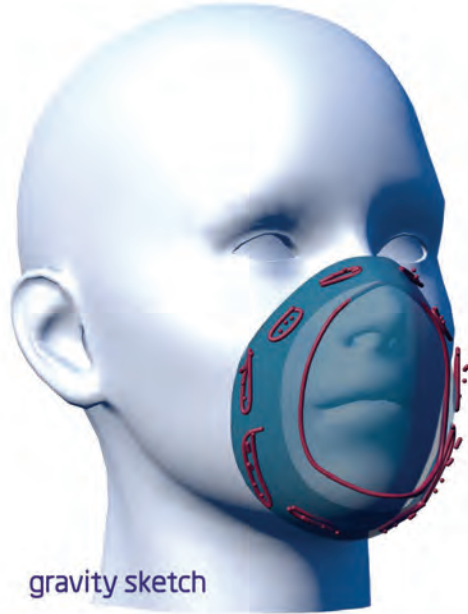
Similar concept

DARCY DUCKWORTH

TITLE : vr concept
WEEK : 9
PAGE : 86



consider foldable design.



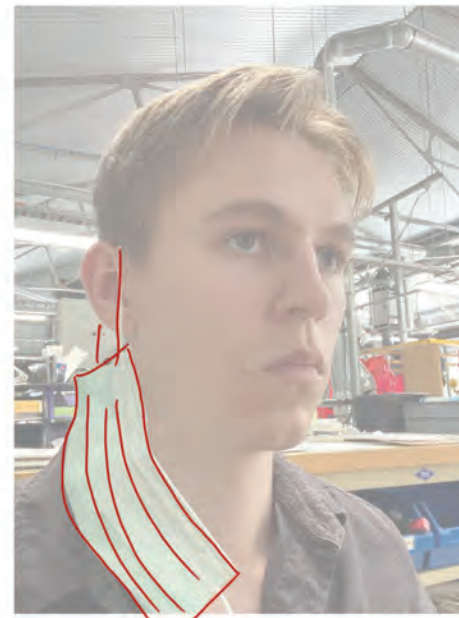
gravity sketch

Small vents for aesthetics

Different form

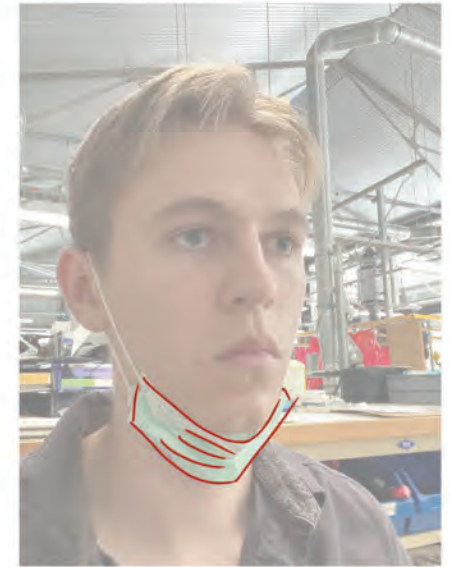


gravity sketch



RELATED PAGES/RESEARCH:

folds away neatly under chin, minimising material under chin



Can be worn on one side of ear.
not sustainable practice

DARCY DUCKWORTH

TITLE : concepts
WEEK : 9
PAGE : 87

RELATED PAGES/RESEARCH:

Mask design should
Prioritise always
being on or worn
at all times with
and maximise
comfort

Can lay mask
flat open under
chin



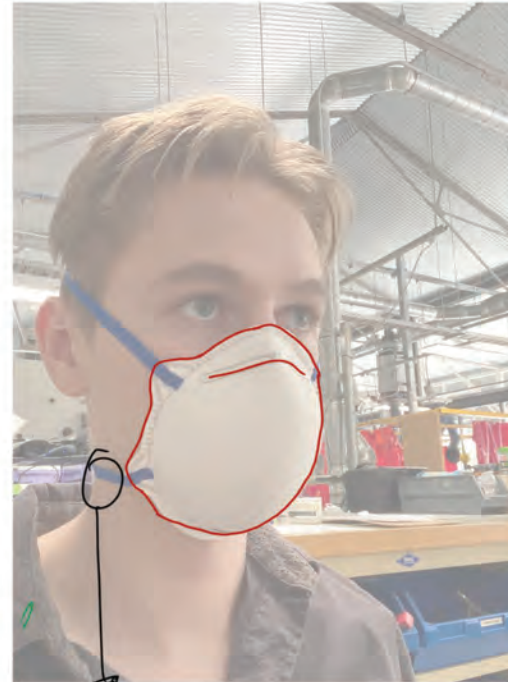
to large
to wear under
chin for extended
periods of time.



+300 grams
nudging off face

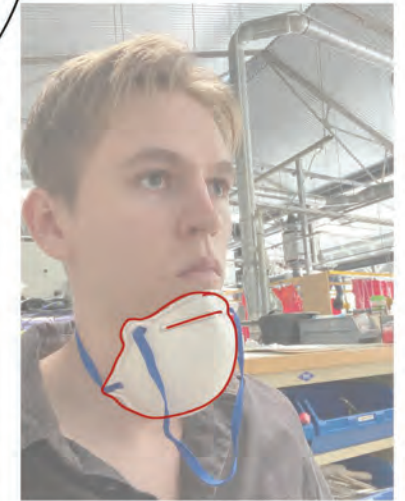
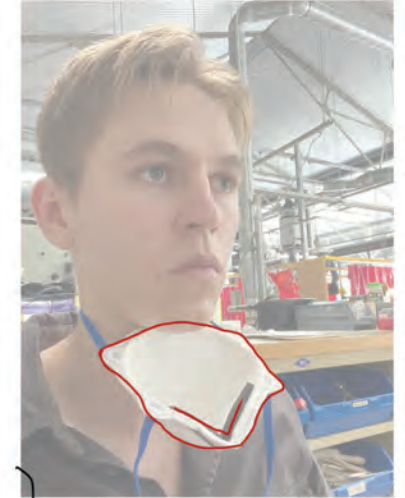


Design should
minimise
weight



neck strap doesn't
apply to much
tension, is it
needed

Rest under
chin closed
Difficult to talk



DARCY DUCKWORTH

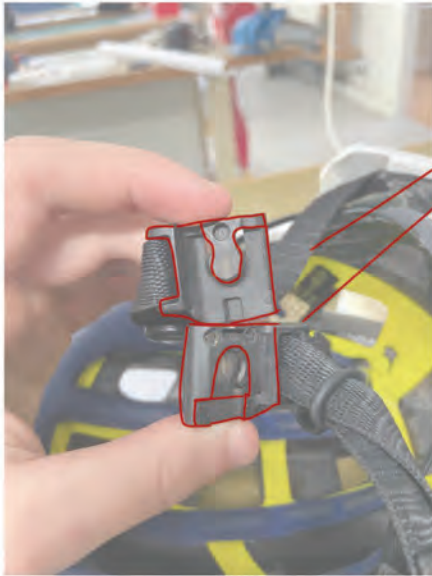
Week 10

TITLE : Mechanism

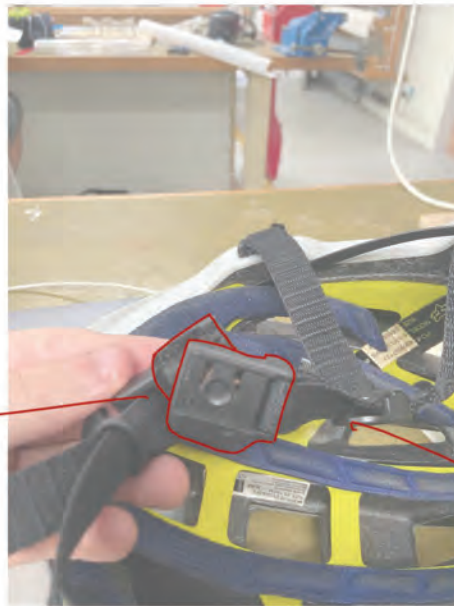
WEEK : 10

PAGE : 88

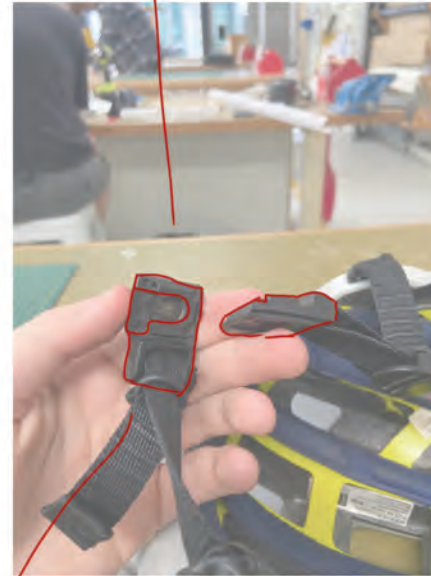
RELATED PAGES/RESEARCH:



Key design can be slotted together any way but only comes out a single direction



latched together on any angle



inset slot design with magnet.

Could a mask use this?



PZ mask

big. Straps are very tight, bottom strap doesn't support much.

DARCY DUCKWORTH

TITLE : mapping system

WEEK : 10

PAGE : 89

RELATED PAGES/RESEARCH:

short exposure, low risk

improves comfort

custom fit →
3D scan

↓
more accessible
than current masks

↖ ↘
light weight

↓
mask always on?

or
easy to put on

↖ ↘
fits on user
under chin?

↖ ↘
out the way
like glasses on
top of head.

DARCY DUCKWORTH

TITLE : mapping

WEEK : 10

PAGE : 90

marketing funnel

Design system

cap style choice

30 fit

beard, no beard
glasses / glasses

— point of different

market leader design (capture market attention)

Display through
info graphic

TITLE : ~~Rob talk~~
 WEEK : 10
 PAGE : 1

Swizzg boxes
 Morphological Boxes

RELATED PAGES/RESEARCH:

• final concept 1 • final concept 2

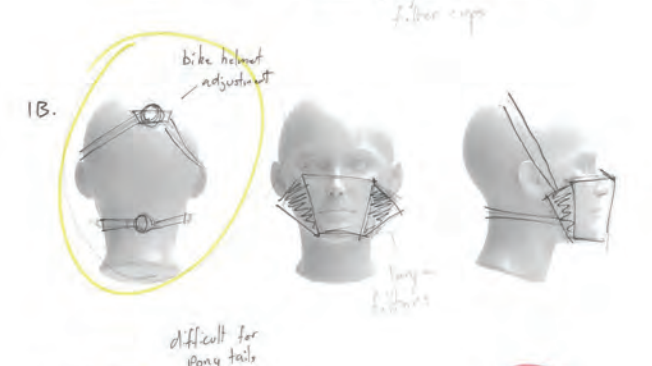
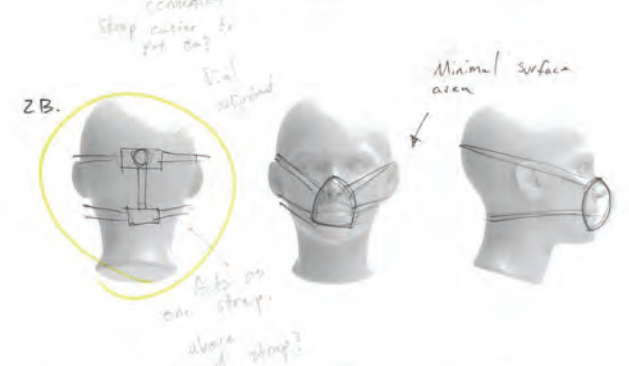
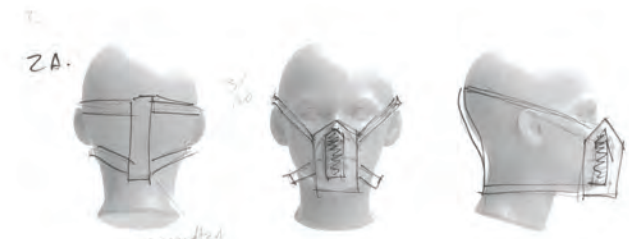
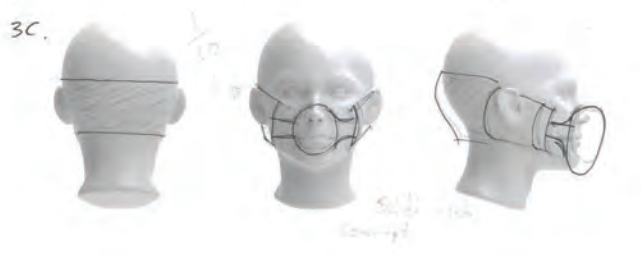
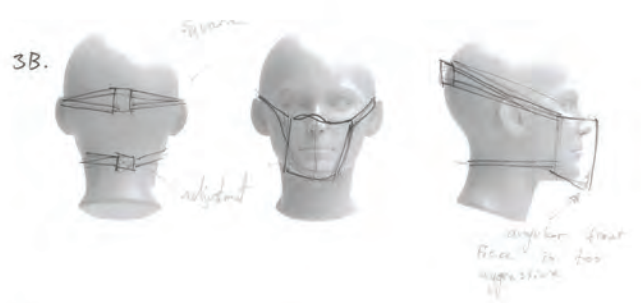
	concept 1	concept 2	concept 3	concept 4	concept 5	concept 6
face mask filter - materials						
face adapter - Part A B C - materials						
head fitment - materials			3	4	4+2	3+1
customisation to face		B.	C.		D.	E.

TITLE : *concepts/*

WEEK : 10

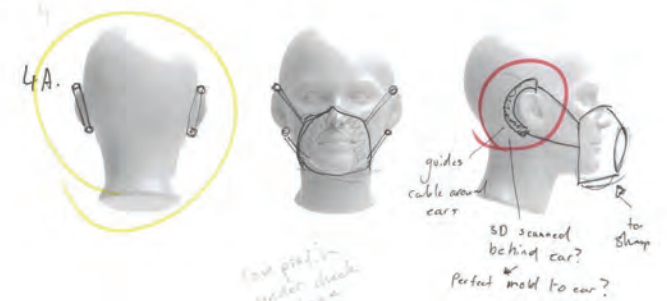
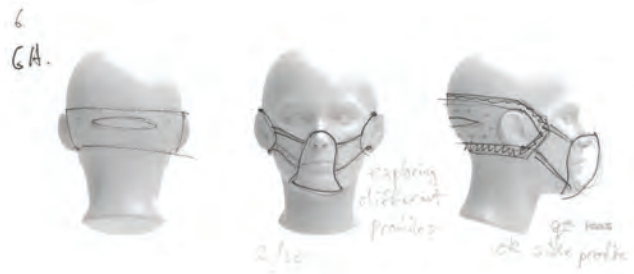
PAGE : 92

RELATED PAGES/RESEARCH:



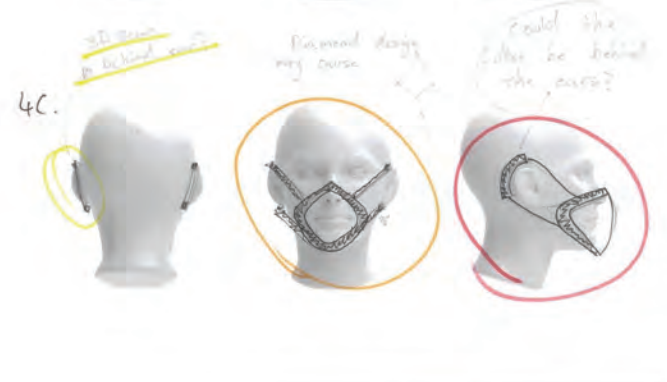
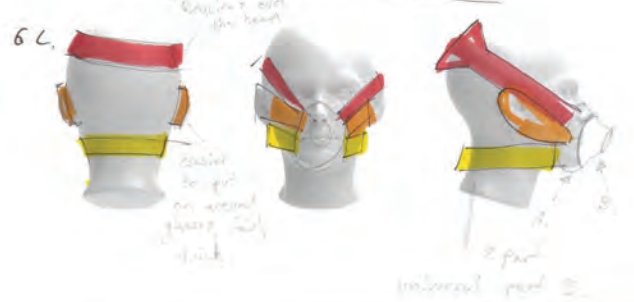
TITLE : concepts
 WEEK : 10
 PAGE : 43

RELATED PAGES/RESEARCH:



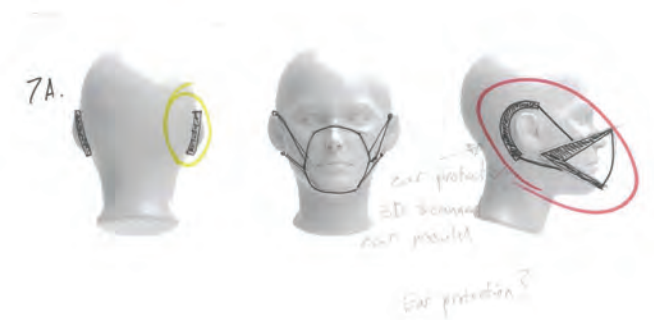
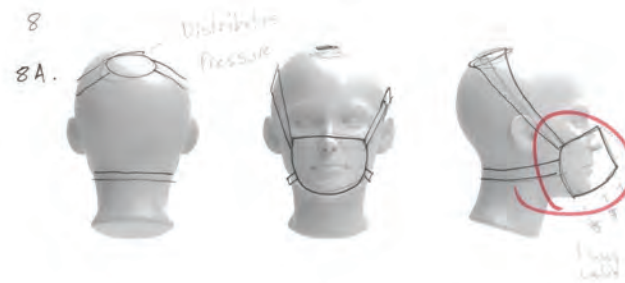
3 types of strap form

Adjustable tension



TITLE : Concepts
WEEK : 10
PAGE : 94

RELATED PAGES/RESEARCH:

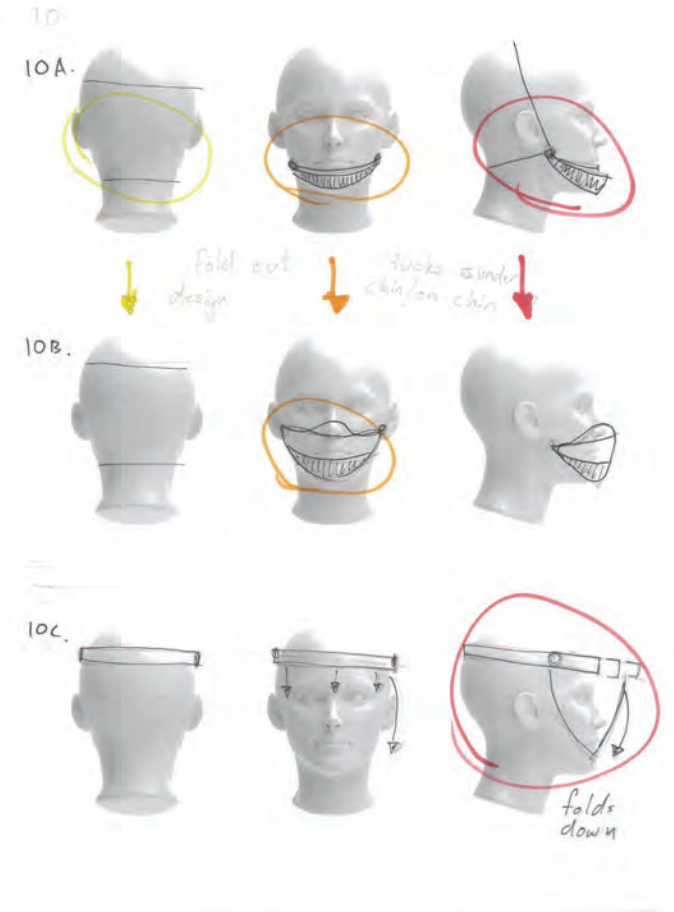
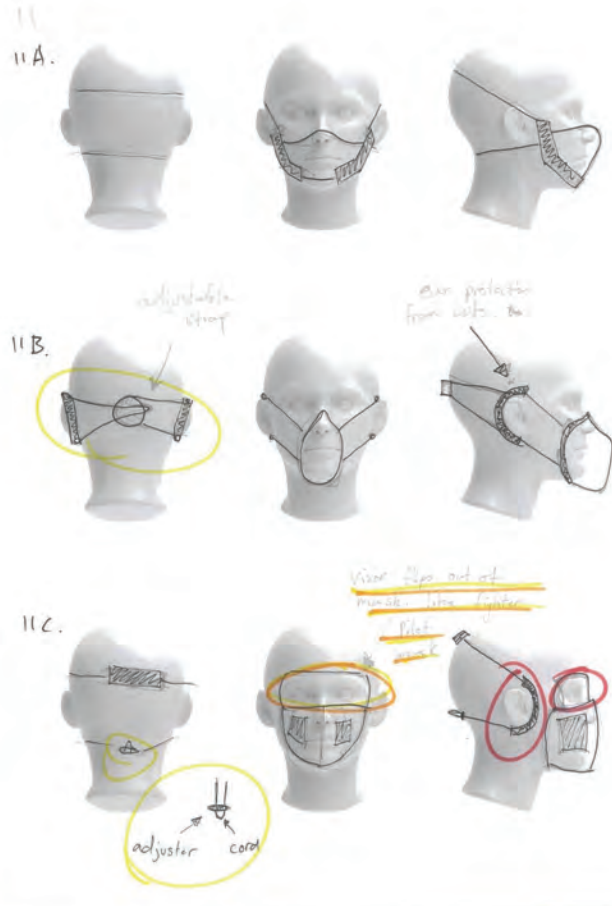
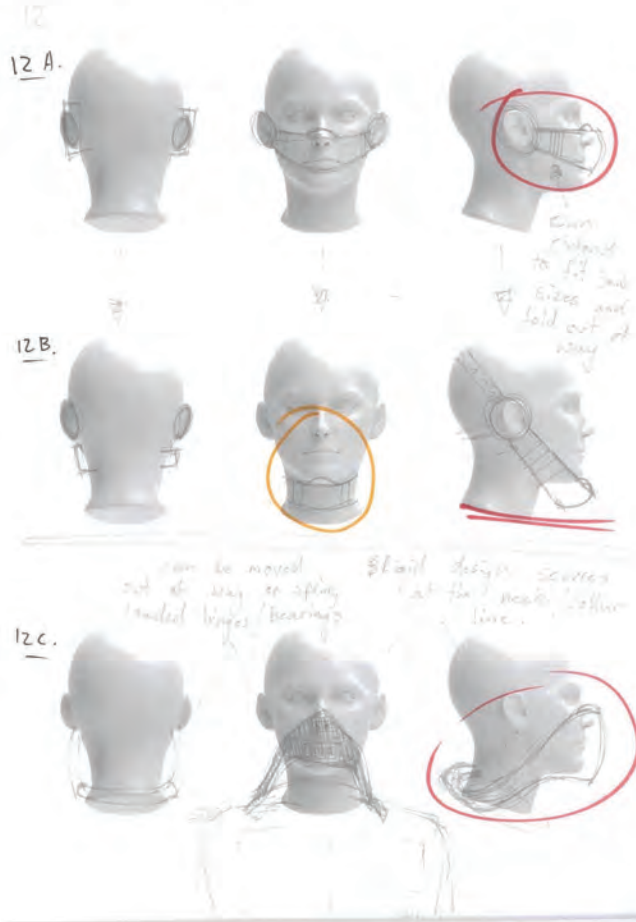


TITLE : *Concepts*

WEEK : 10

PAGE : 95

RELATED PAGES/RESEARCH:

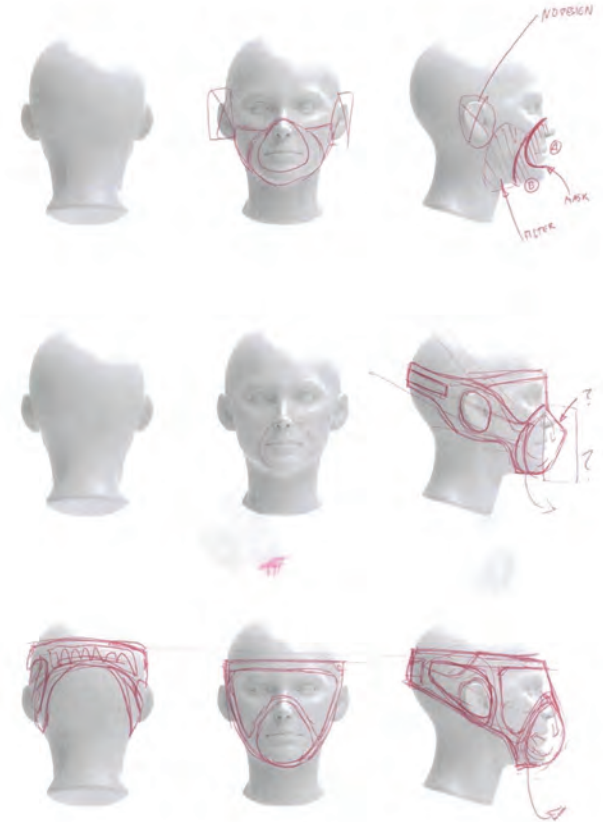


TITLE : *concepts*
 WEEK : 10
 PAGE : 96

RELATED PAGES/RESEARCH:

10A. + 10B.	Design + mechan	fold away design/mech
10C. + 10D.		folds down from forehead
11B.	3 strap	adjustable strap mechanism
11C.	Strap + glasses	adjustable cord length tension glasses design fighter pilot helmet
12A + 12B	Folding mechan	Folds under chin
12C.	design strap.	fixed on shoulders, adjustable height/fitment

13.	strap	bike helmet adjustment quick on/off
14.	strap and side shape	interesting strap shape = descent but curved side profile
15B.	2 strap	dial + connected straps.
16A.	Strap around ear	strap on/off with ear cut guards, lightweight easy to put on
4B.	profiles	under ear strap to avoid ear pain, not wear neck pit may irritate comfort
4C.	strap + profile	good aesthetic 3D print behind ear?
5B.	profile	interesting shape
5C.	strap	generic but with strap design
6C.	strap design	2 types of straps, head and or behind ears
7A.	profile	interesting profile
8A. + 8B	"	"
9A.	strap + profile	adjustable quick on/off, like office ear cord chain or tape measure mechanism
9C.	profile	vent designs, multiple size ways?



TITLE : *concepts*
WEEK : 10
PAGE : 97

RELATED PAGES/RESEARCH:



TITLE : Concepts

WEEK : 10

PAGE : 98

RELATED PAGES/RESEARCH:



TITLE : Concepts

WEEK : 10

PAGE : 99

RELATED PAGES/RESEARCH:



TITLE : *Concepts*
WEEK : 10
PAGE : 100

RELATED PAGES/RESEARCH:

2.



1.



12 A.



12 B.
12 A.



TITLE : *concept-*
WEEK : 10
PAGE : 101

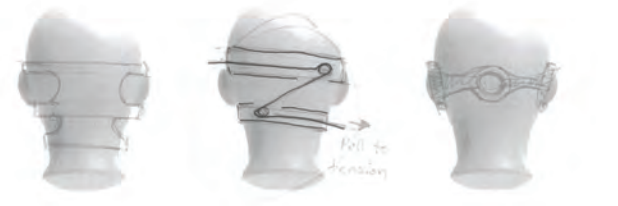
RELATED PAGES/RESEARCH:



2.



3.



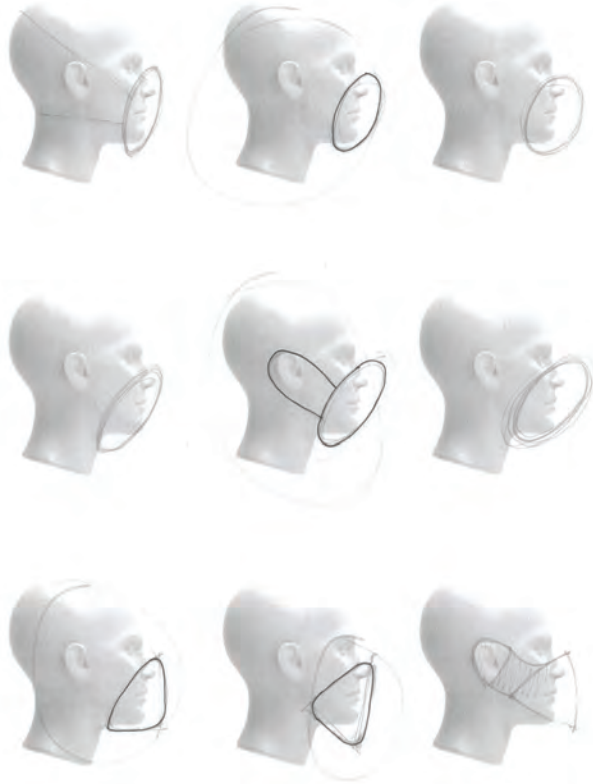
TITLE : *concepts*

WEEK : 10

PAGE : 102

RELATED PAGES/RESEARCH:

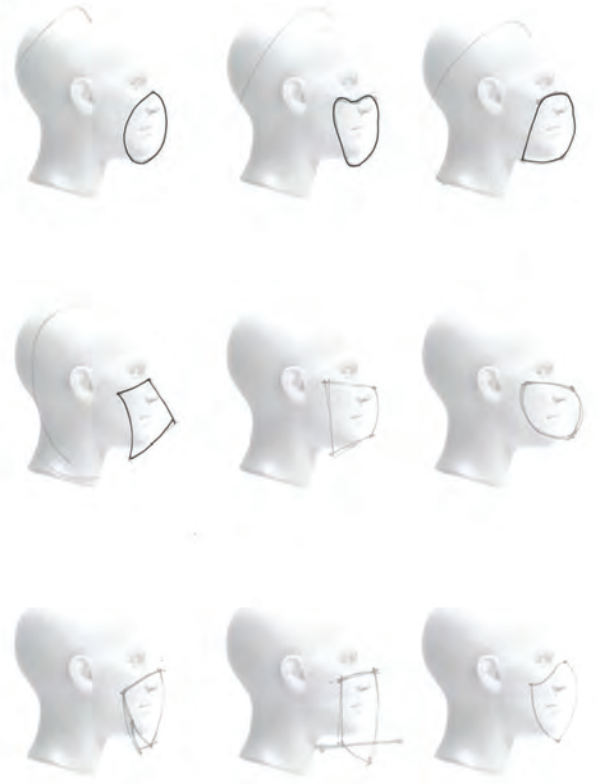
3.



2.



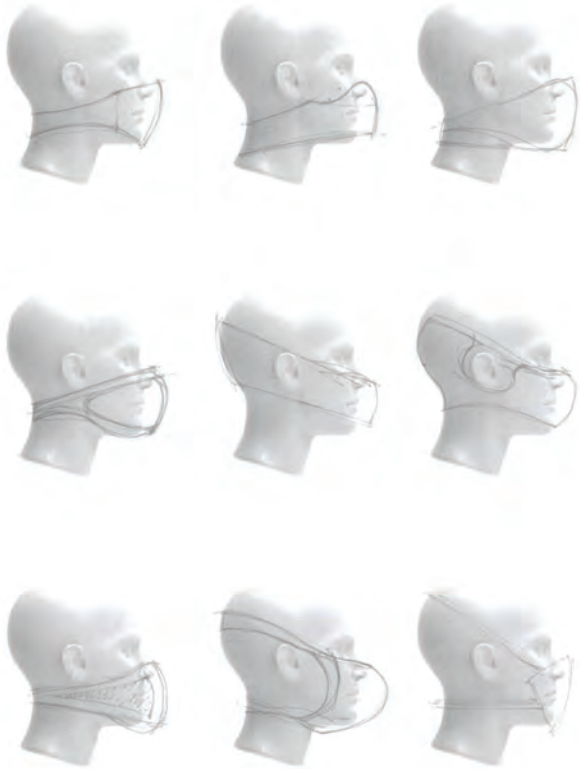
1.



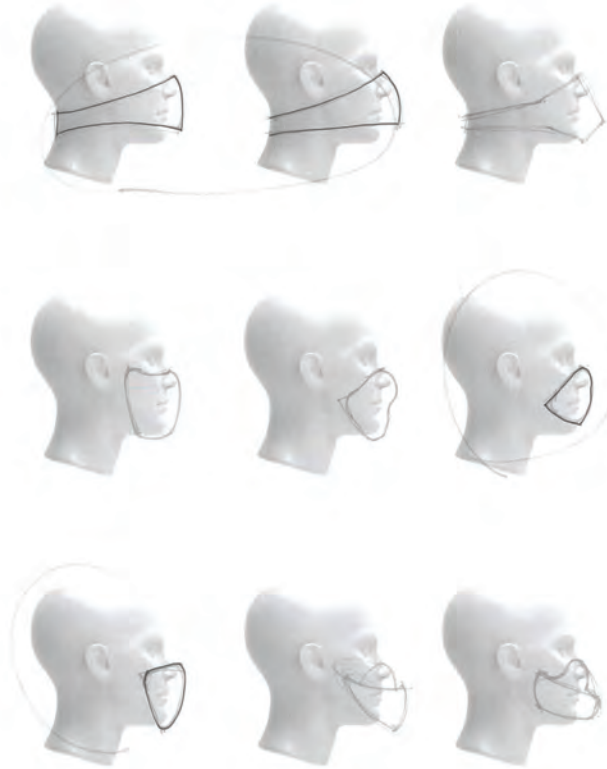
TITLE : *Concepts*
WEEK : 10
PAGE : 103

RELATED PAGES/RESEARCH:

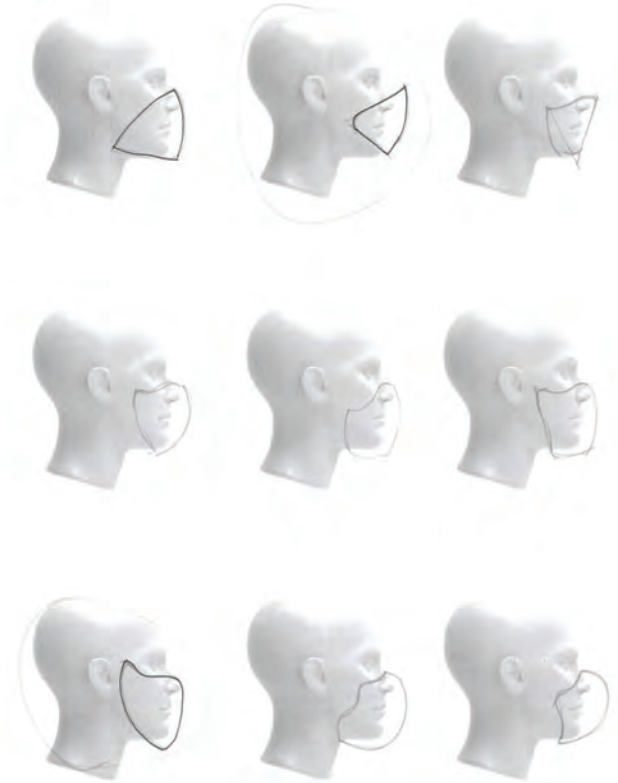
6.



5.



4.



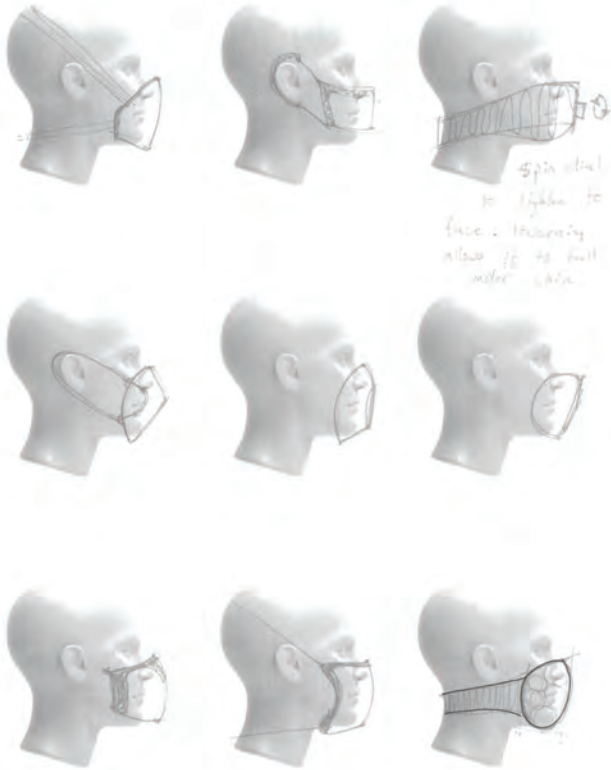
TITLE : *Concepts*

WEEK : 10

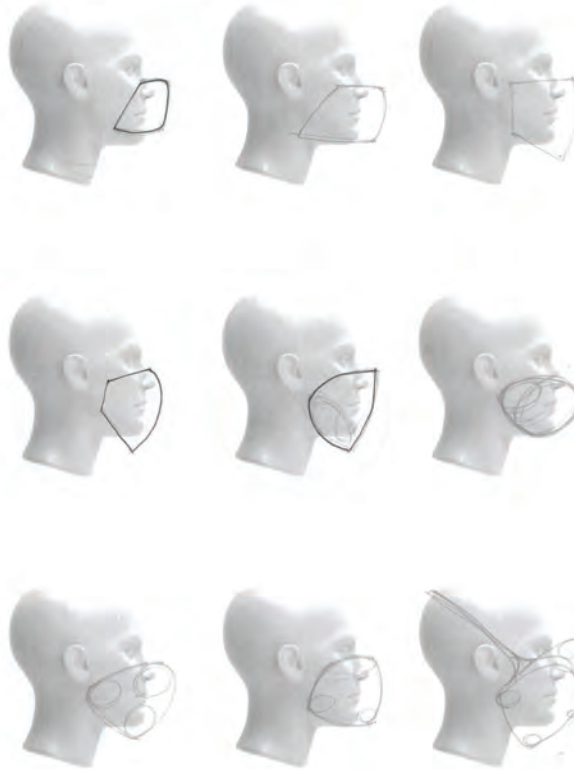
PAGE : 104

RELATED PAGES/RESEARCH:

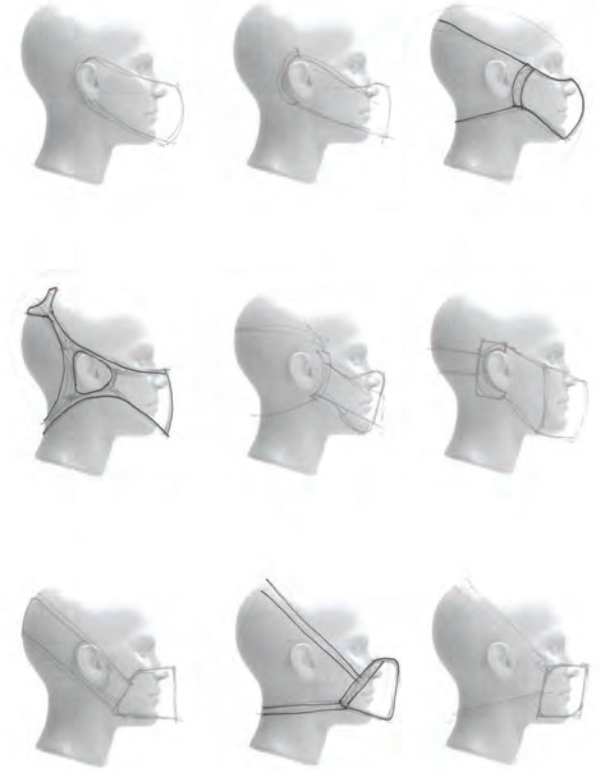
10.



9.



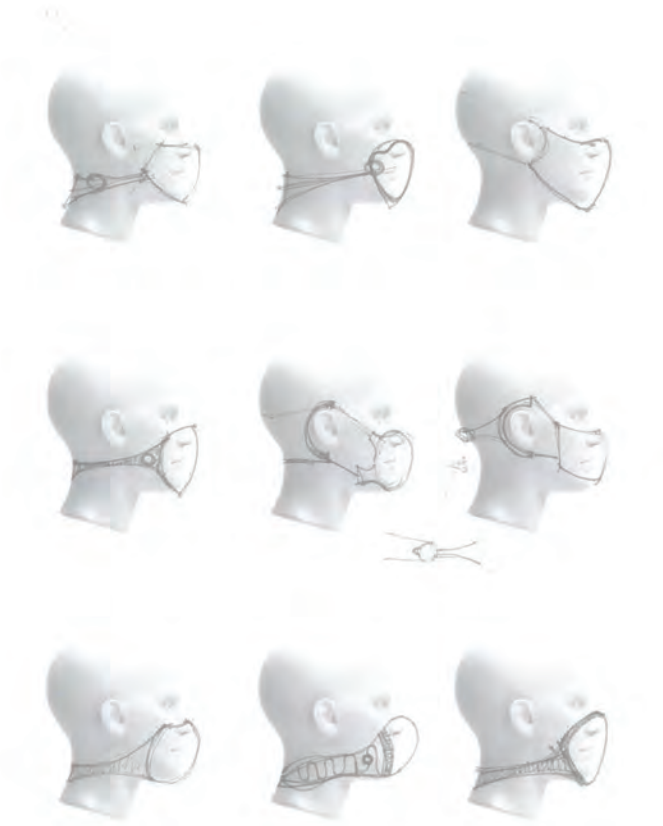
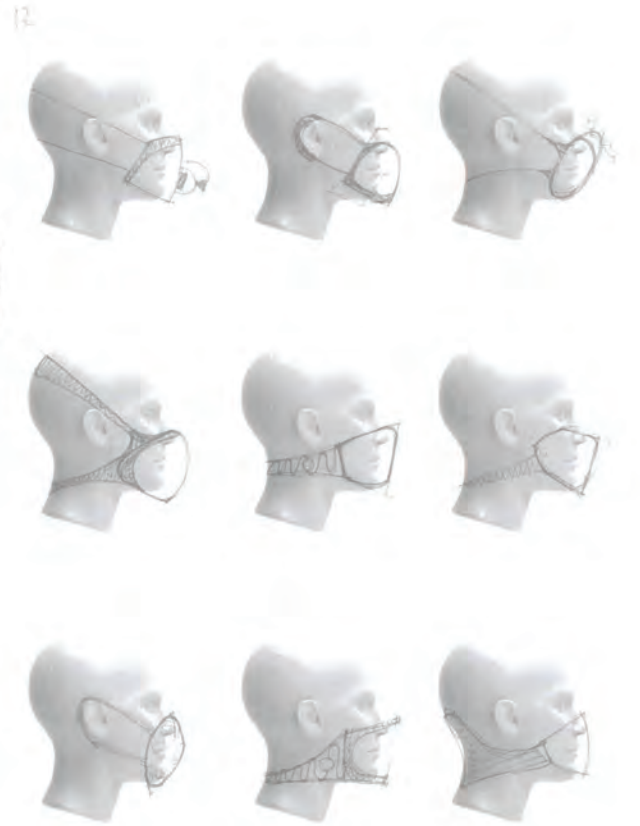
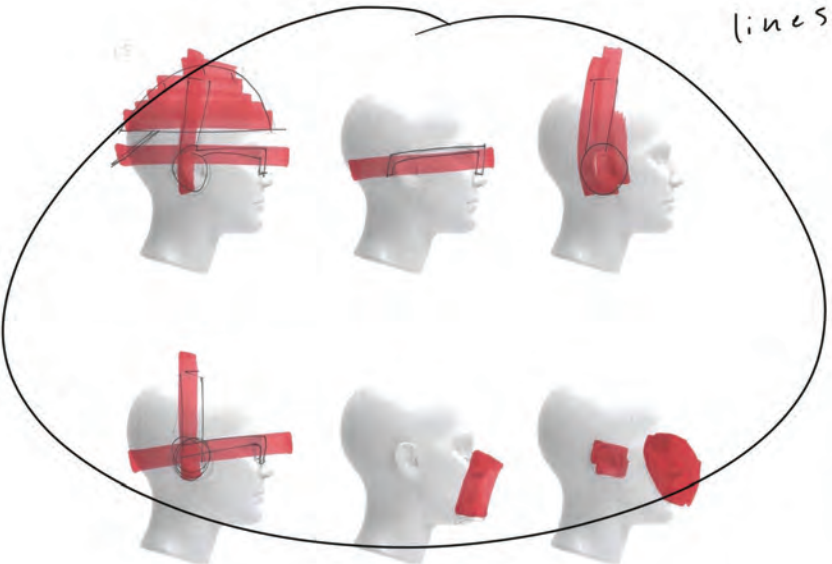
8.



TITLE : *concepts*
WEEK : 10
PAGE : 105

RELATED PAGES/RESEARCH:

*cannot
cross red
lines*



TITLE : *Crude modeling*

WEEK : 10

PAGE : 106

RELATED PAGES/RESEARCH:



Week 11

Sick this week

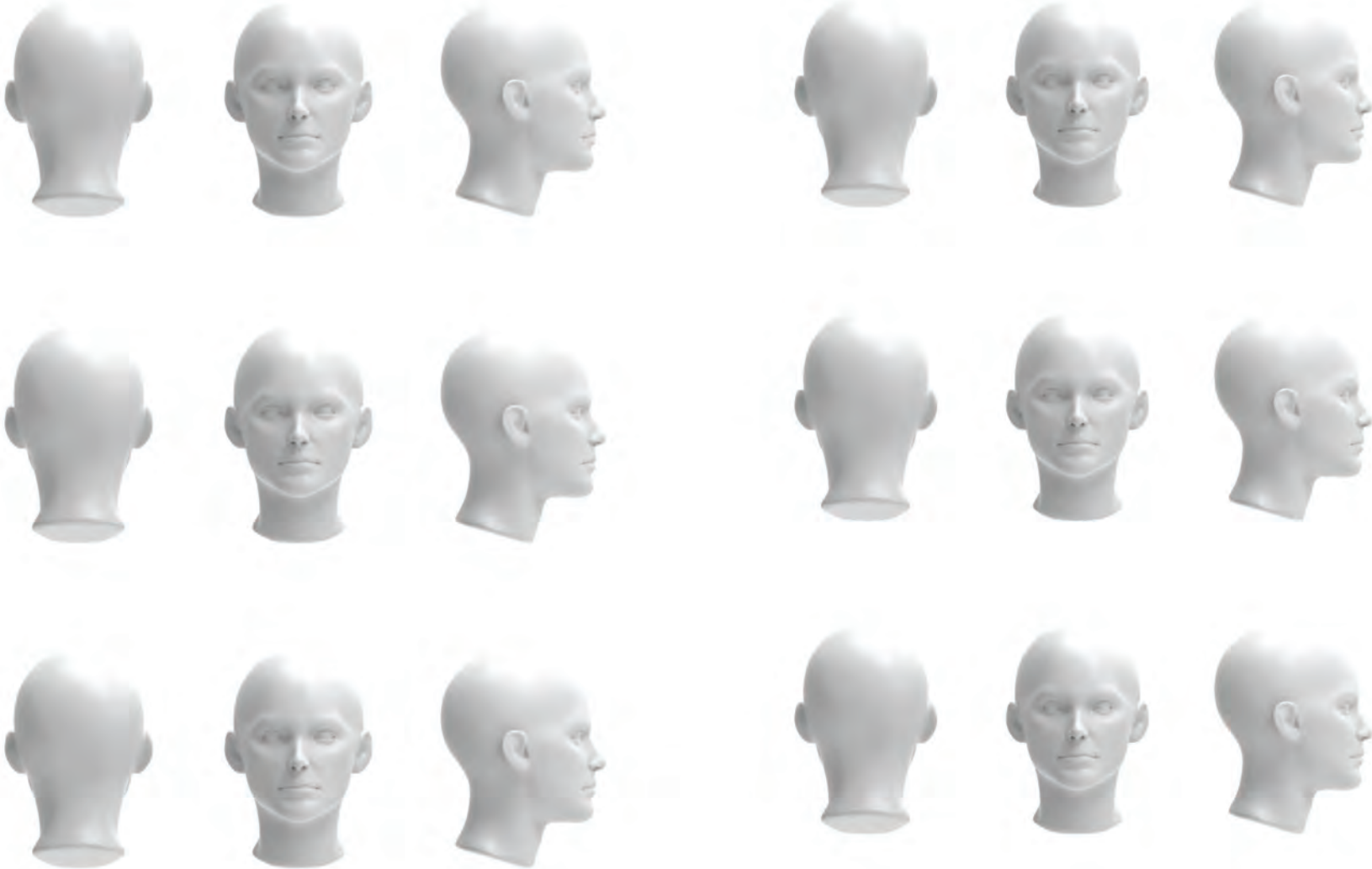
Week 12

TITLE : mask template

WEEK : 12

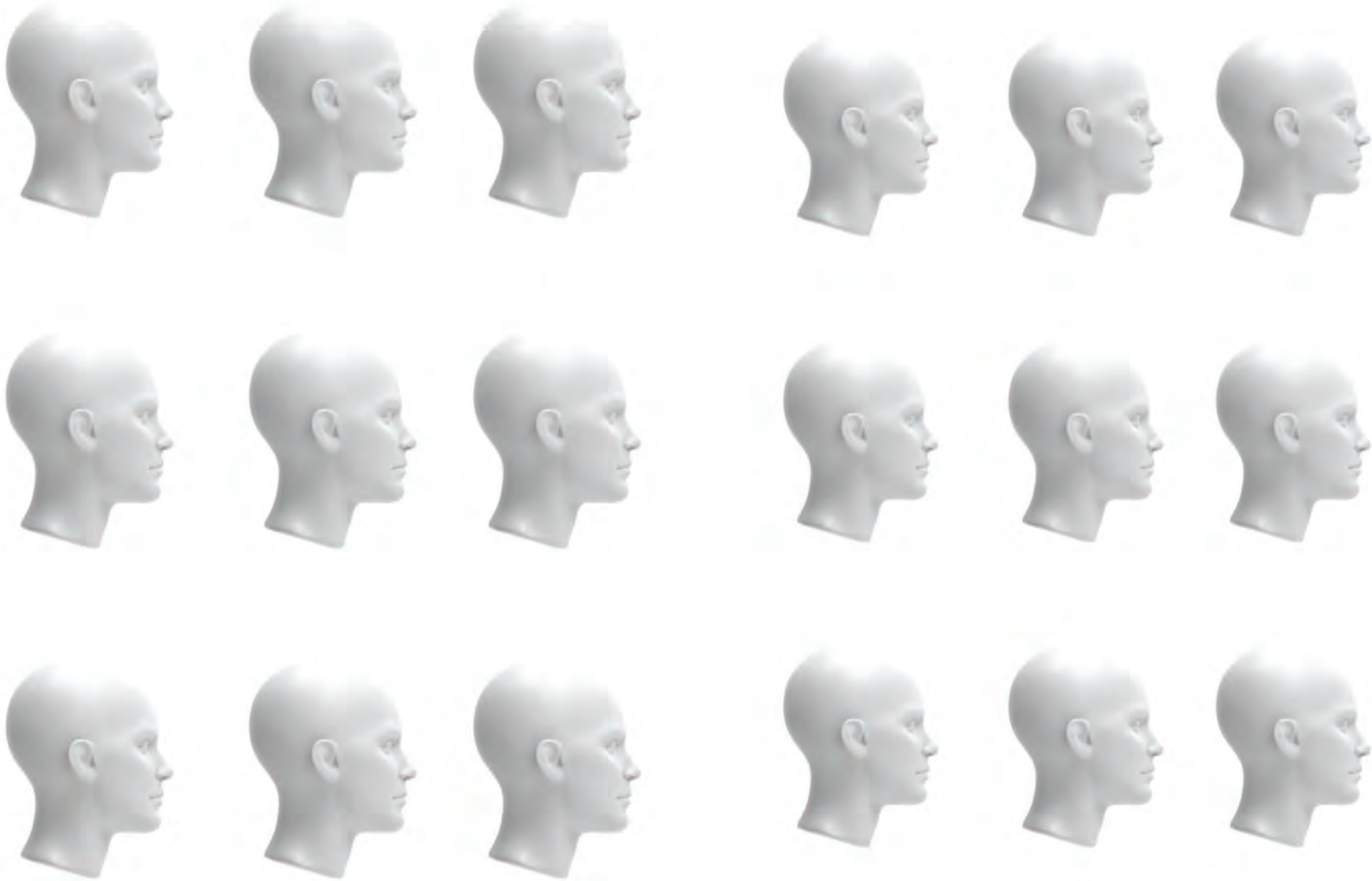
PAGE : 107

RELATED PAGES/RESEARCH:



TITLE : *templates*
WEEK : 12
PAGE : 108

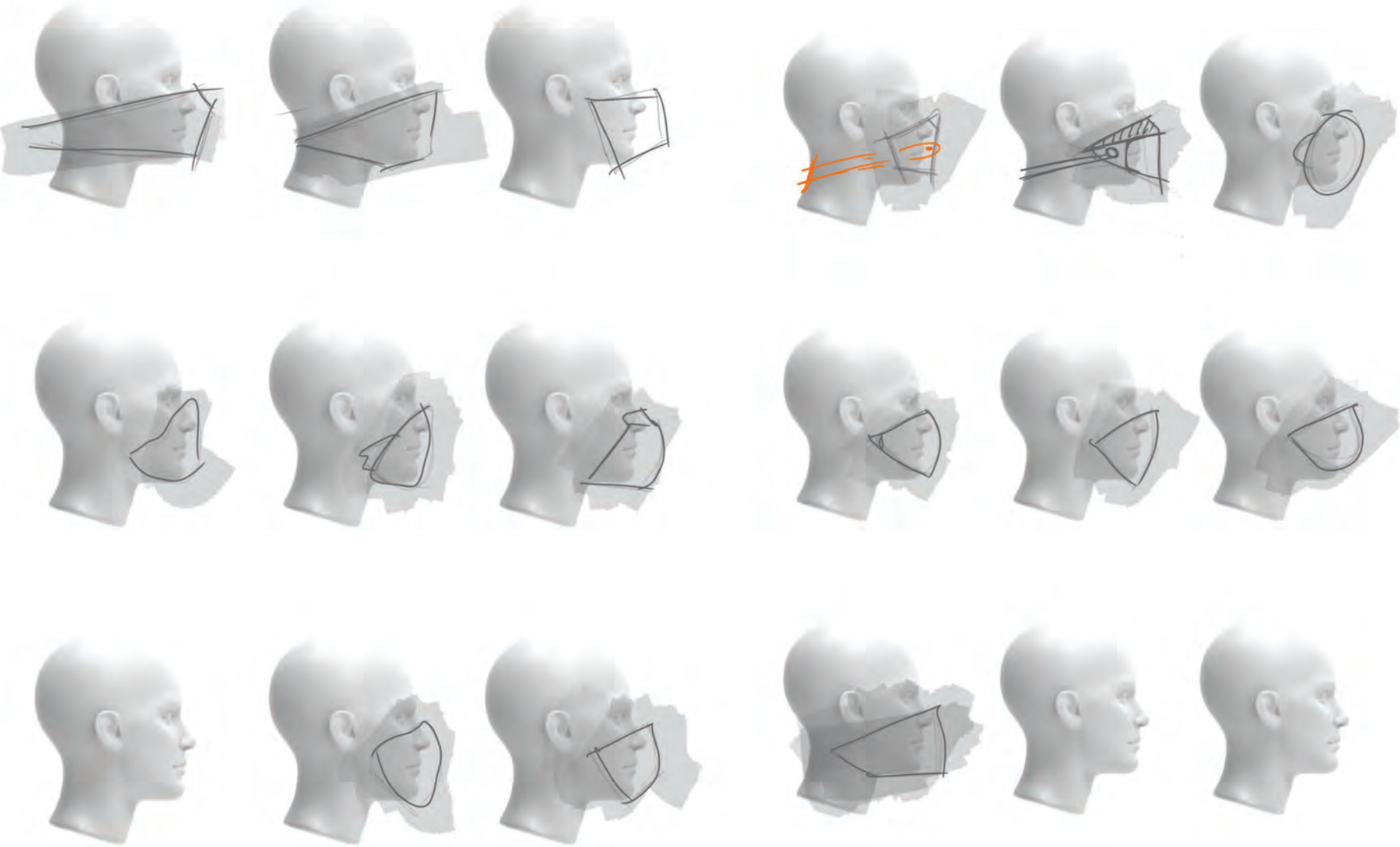
RELATED PAGES/RESEARCH:



DARCY DUCKWORTH

TITLE : *cocepts*
WEEK : 12
PAGE : 109

RELATED PAGES/RESEARCH:



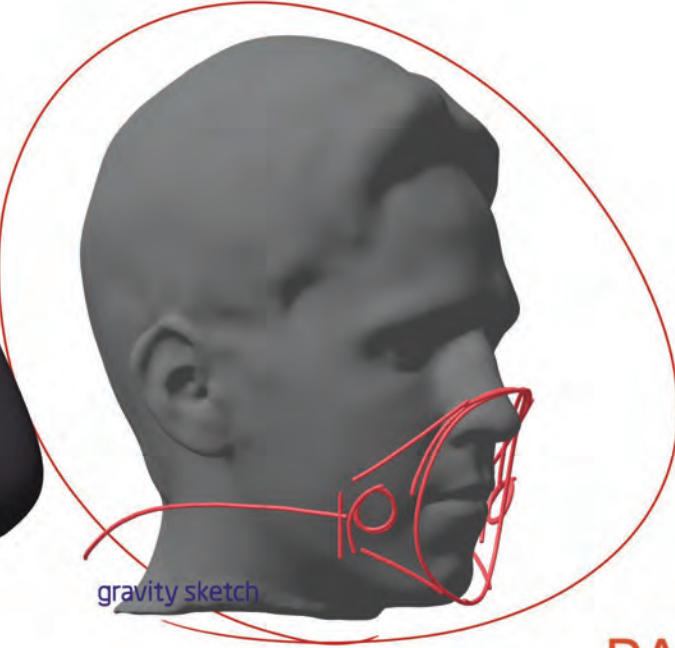
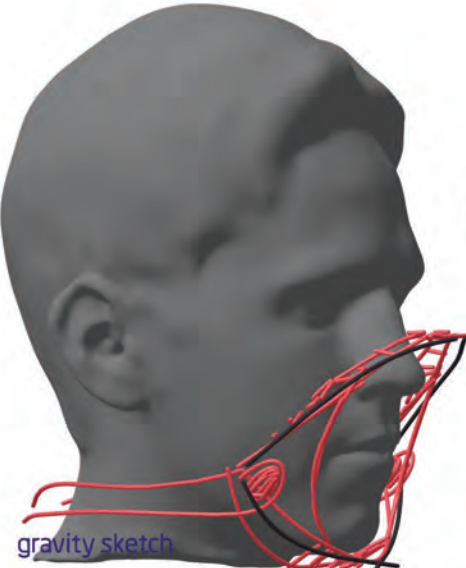
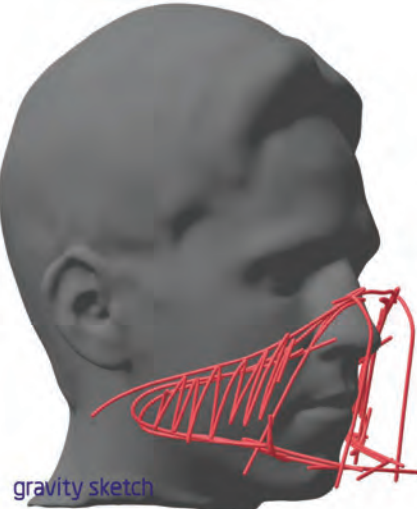
DARCY DUCKWORTH

TITLE : *vr concepts*

WEEK : 12

PAGE : 110

RELATED PAGES/RESEARCH:



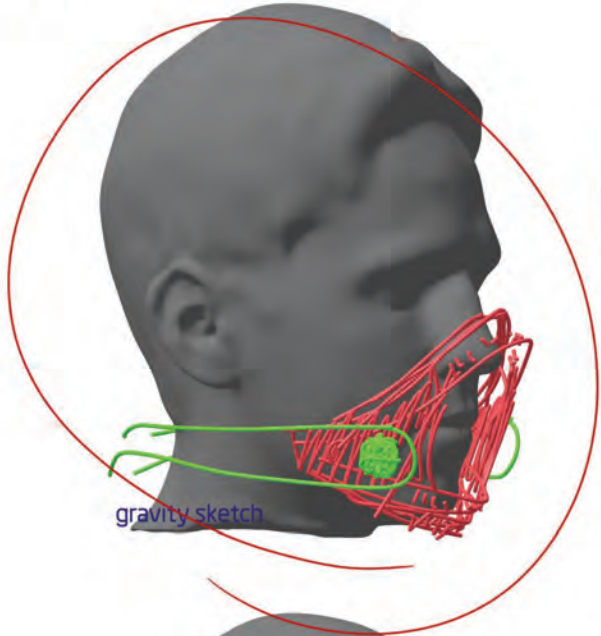
DARCY DUCKWORTH

TITLE : vr concepts

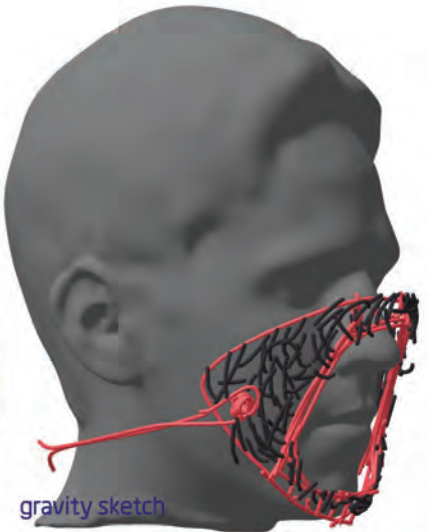
WEEK : 12

PAGE : (11)

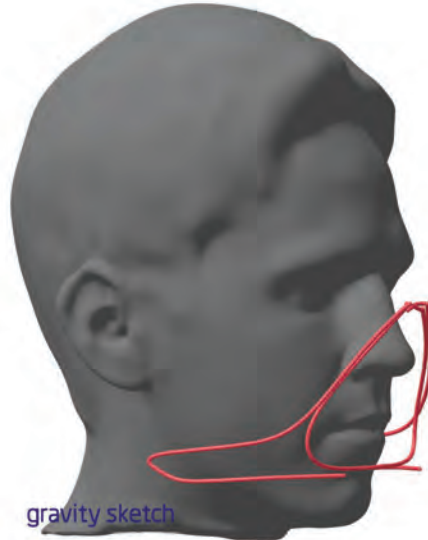
RELATED PAGES/RESEARCH:



gravity sketch



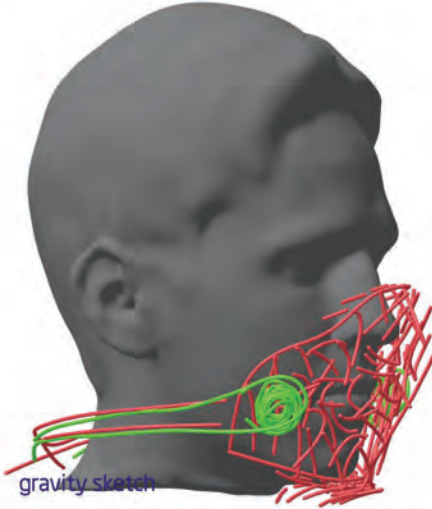
gravity sketch



gravity sketch



gravity sketch



gravity sketch

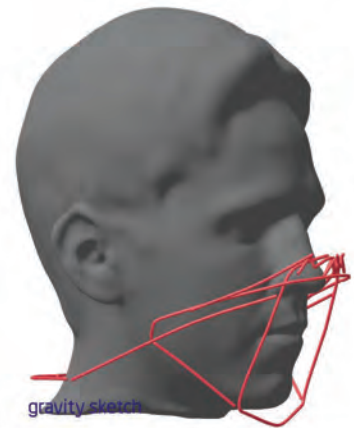
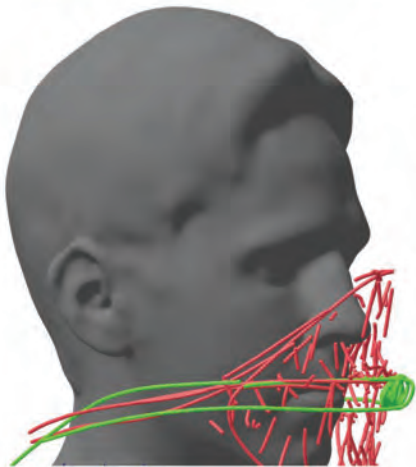
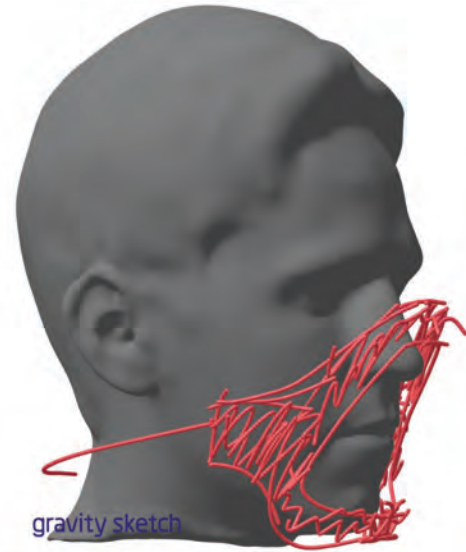
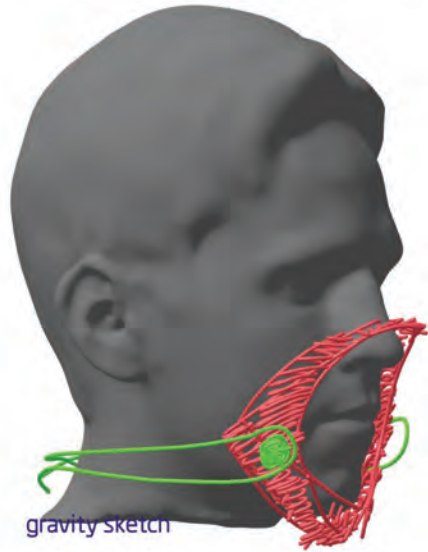


gravity sketch

DARCY DUCKWORTH

TITLE : vr concepts
WEEK : 12
PAGE : 112

RELATED PAGES/RESEARCH:



DARCY DUCKWORTH

TITLE : vr concepts

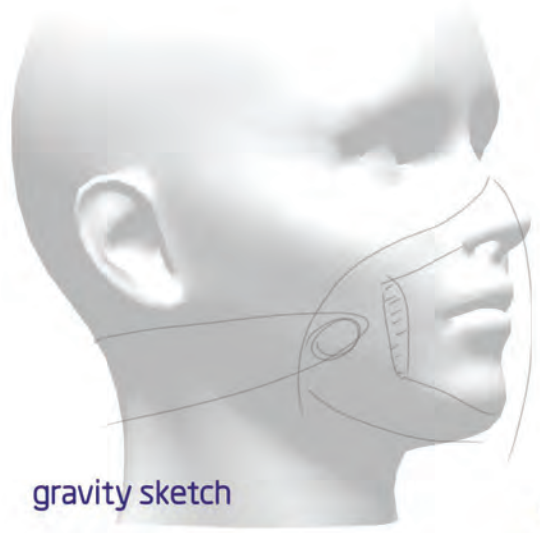
WEEK : 12

PAGE : 113

RELATED PAGES/RESEARCH:



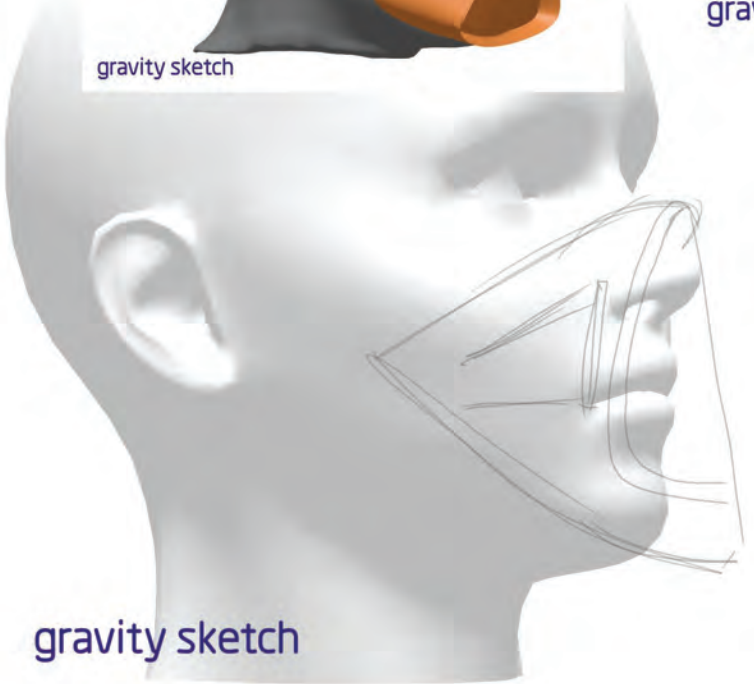
gravity sketch



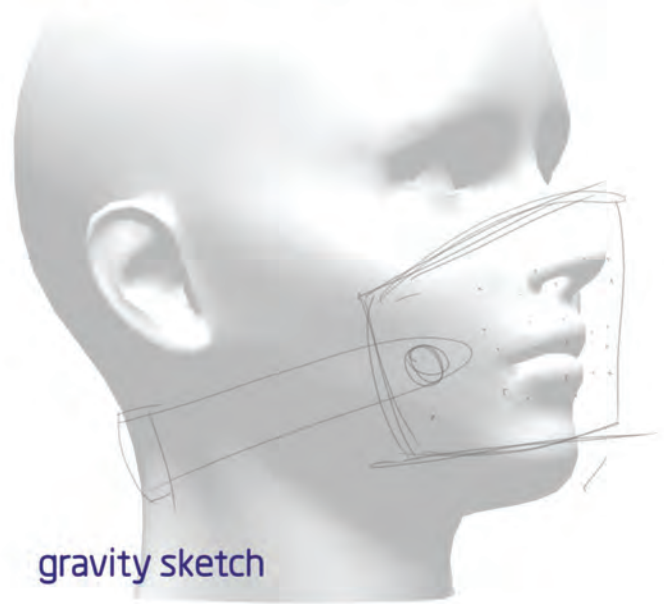
gravity sketch



gravity sketch



gravity sketch



gravity sketch

TITLE : *vr concepts*

WEEK : 12

PAGE : 114

RELATED PAGES/RESEARCH:



gravity sketch



gravity sketch



gravity sketch



gravity sketch



gravity sketch



gravity sketch



gravity sketch



gravity sketch

DARCY DUCKWORTH

TITLE : concepts

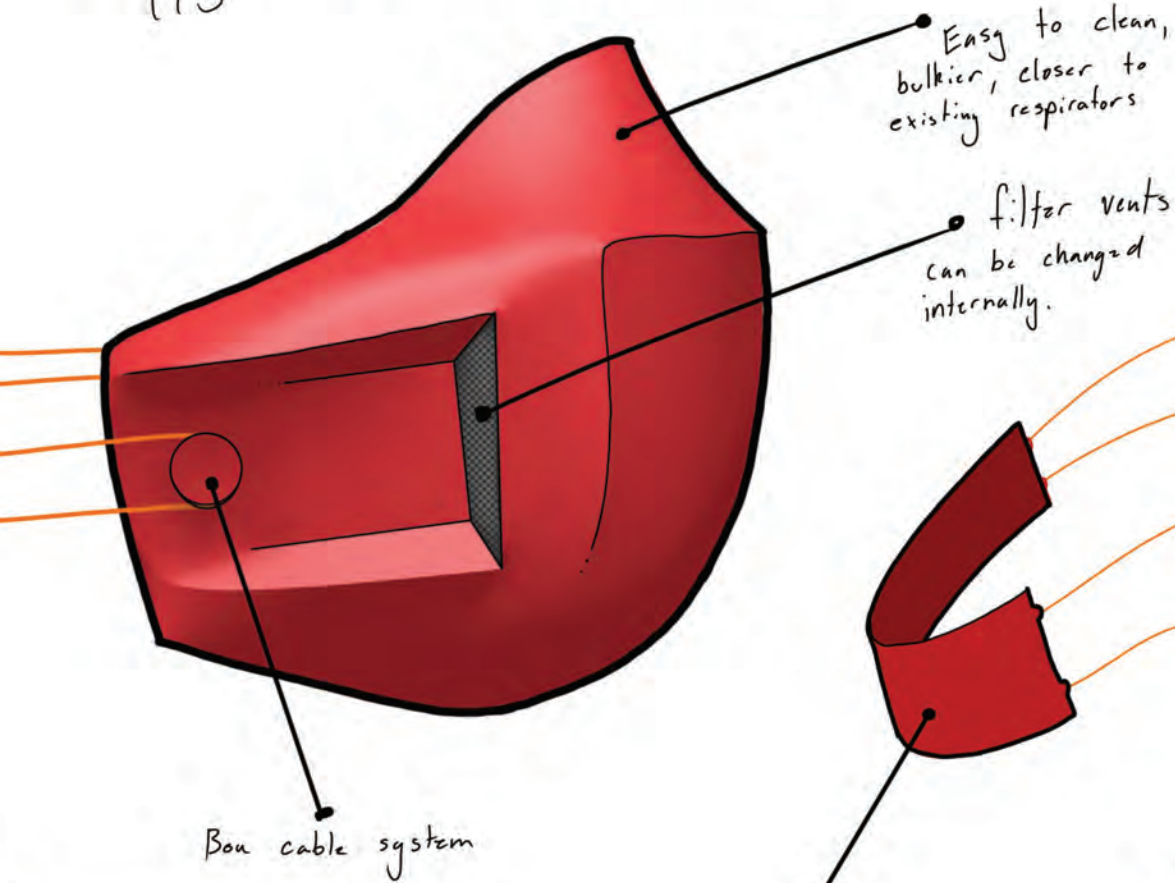
RELATED PAGES/RESEARCH:

WEEK : 12

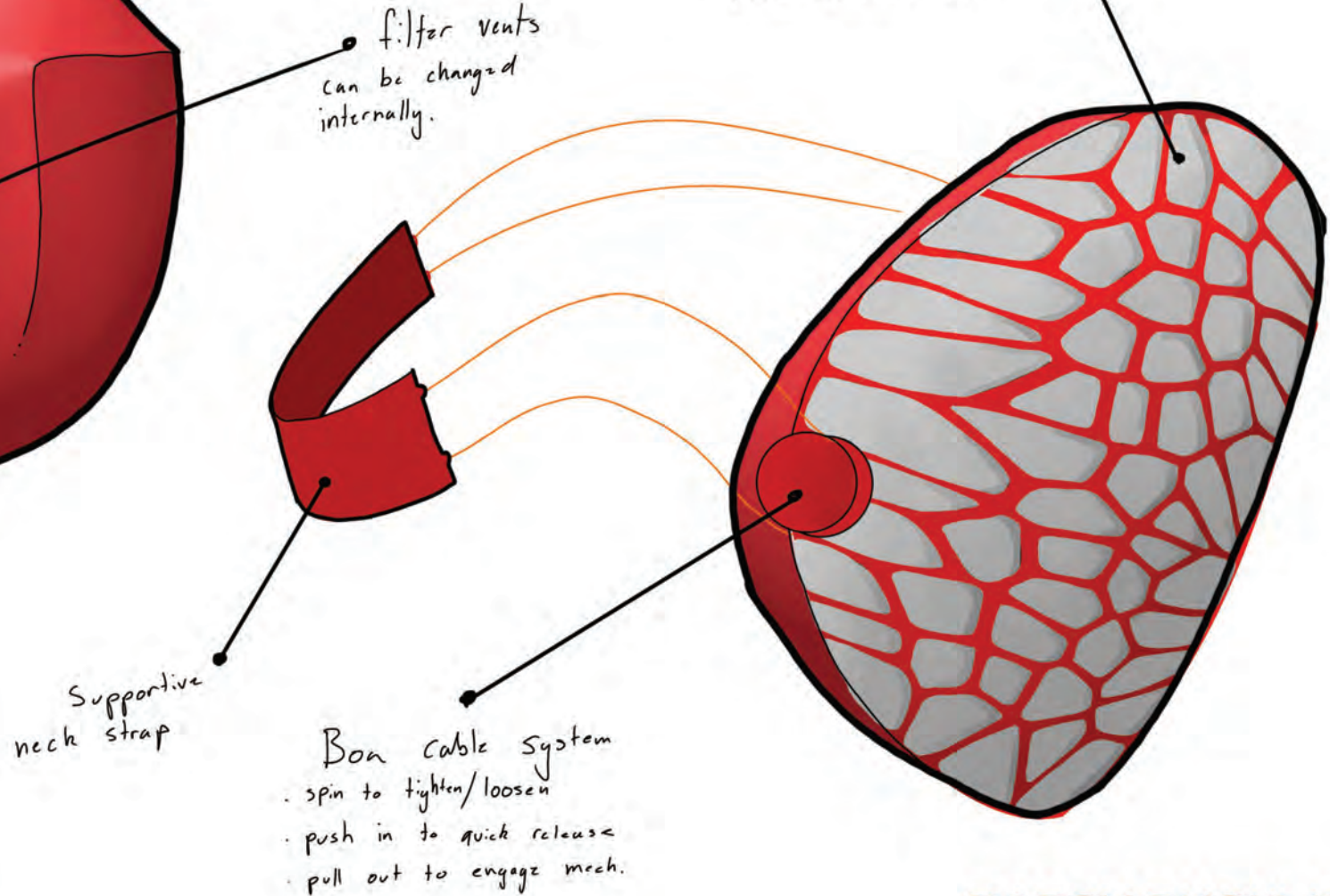
PAGE : Semi - Rigid Design

flexible design

115



Easy to clean, reduces weight, greater filter surface area.

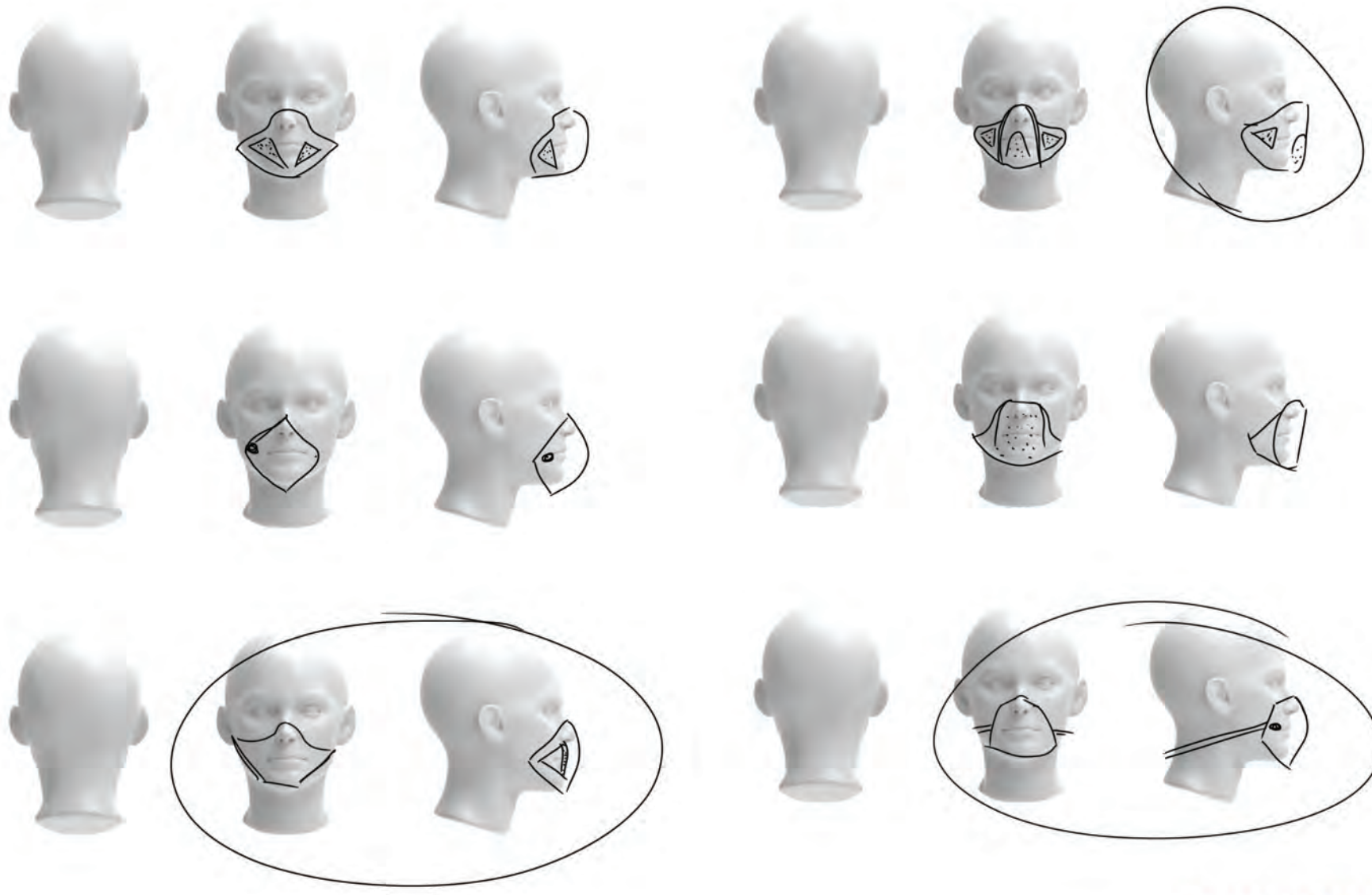


DARCY DUCKWORTH



TITLE : Concepts
WEEK : 12
PAGE : 116

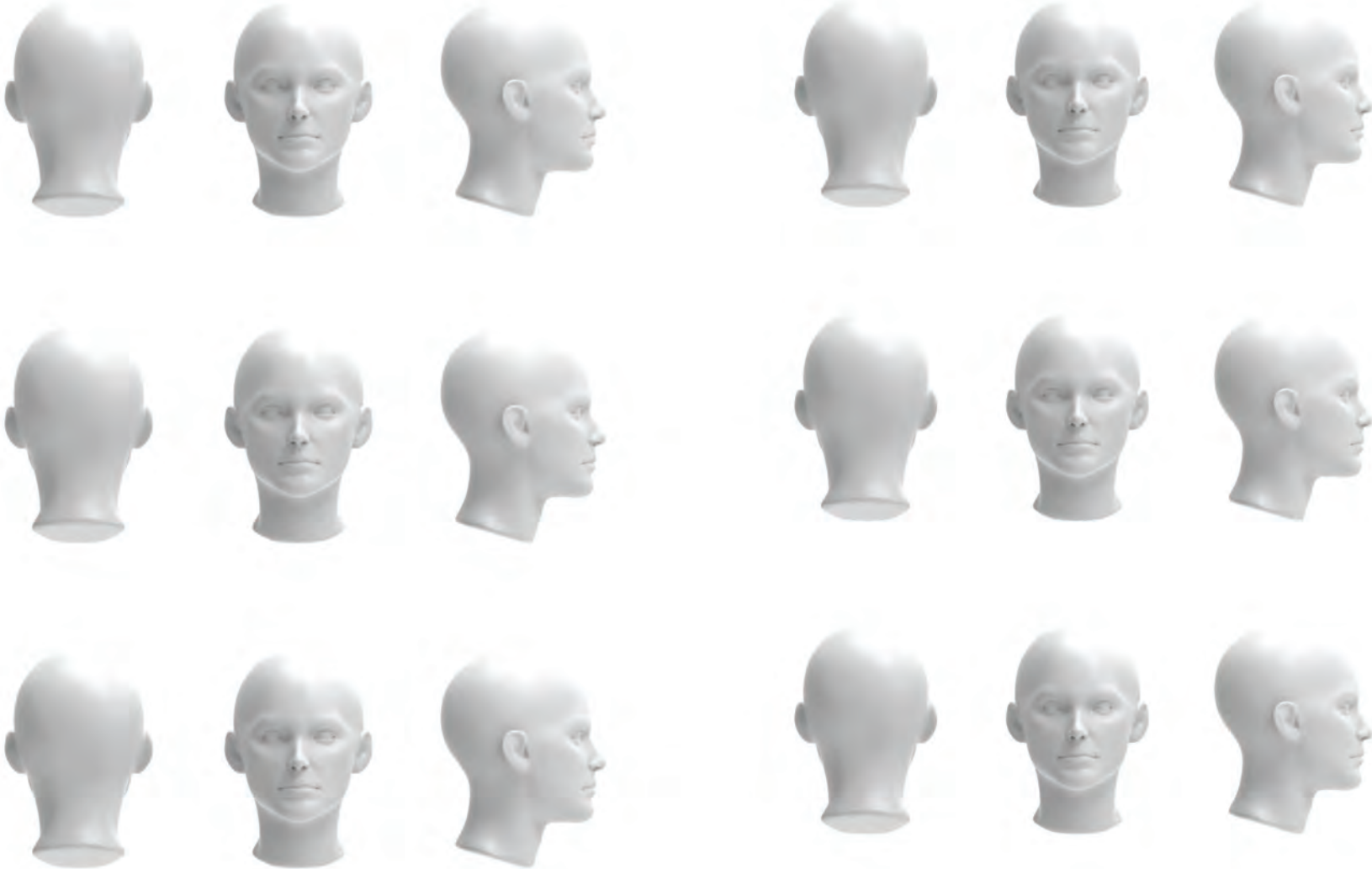
RELATED PAGES/RESEARCH:



DARCY DUCKWORTH

TITLE : *templatz*
WEEK : 12
PAGE : 117

RELATED PAGES/RESEARCH:



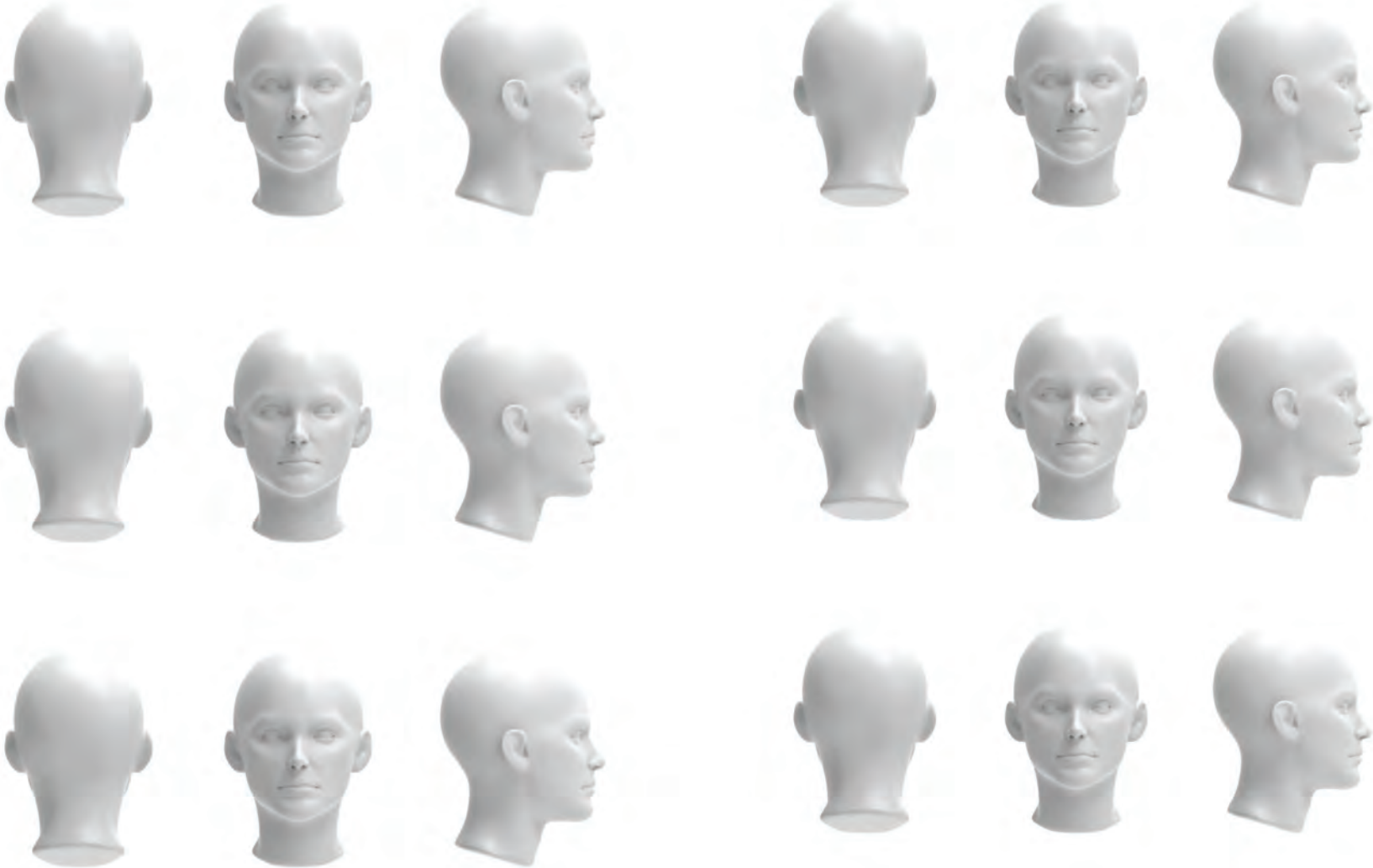
DARCY DUCKWORTH

TITLE : *templates*

WEEK : 12

PAGE : 118

RELATED PAGES/RESEARCH:

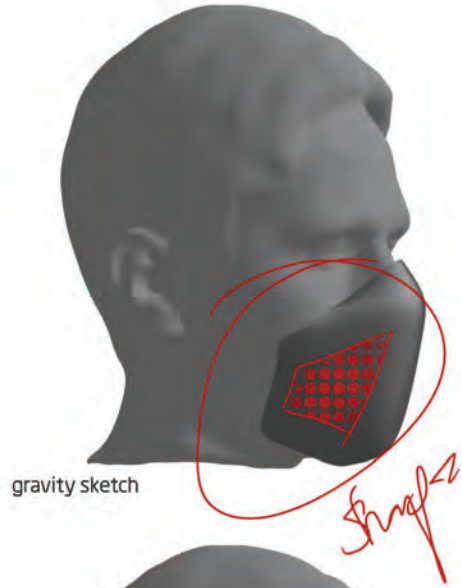


TITLE : *Concepts*

WEEK : 12

PAGE : 119

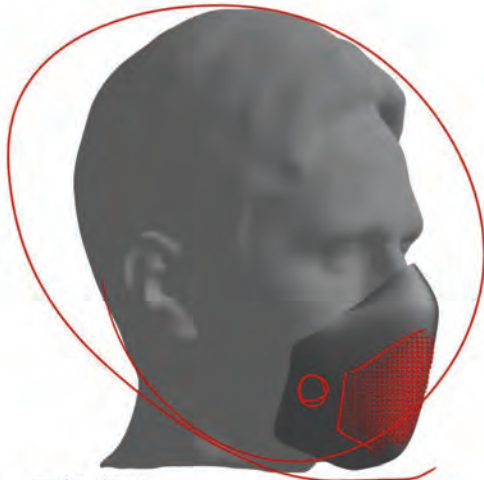
RELATED PAGES/RESEARCH:



DARCY DUCKWORTH

TITLE : *concept 1*
WEEK : 12
PAGE : 120

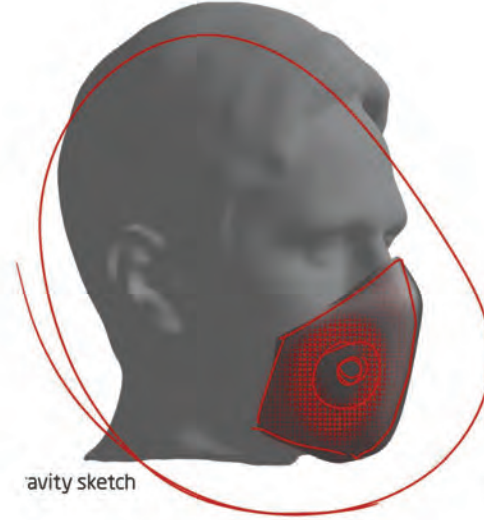
RELATED PAGES/RESEARCH:



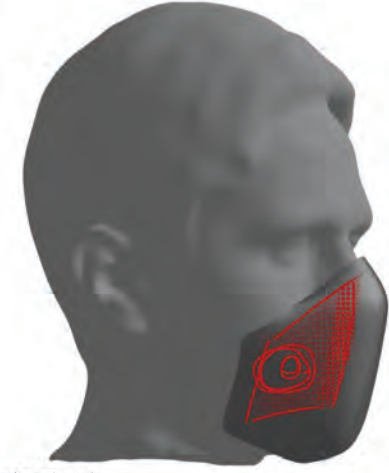
gravity sketch



gravity sketch



gravity sketch



gravity sketch



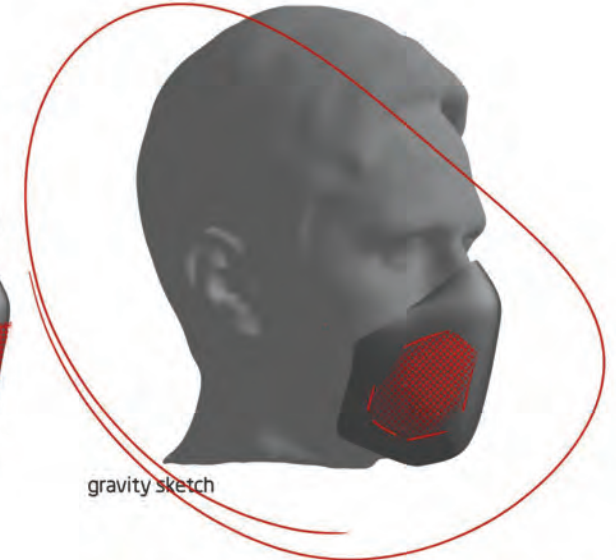
gravity sketch



gravity sketch



gravity sketch



gravity sketch

DARCY DUCKWORTH

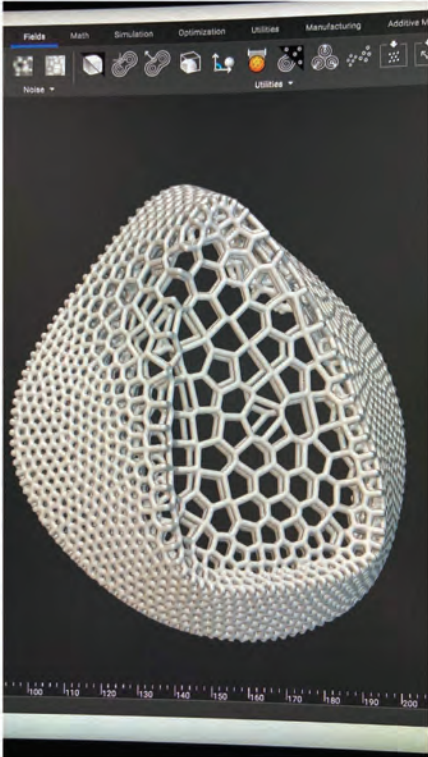
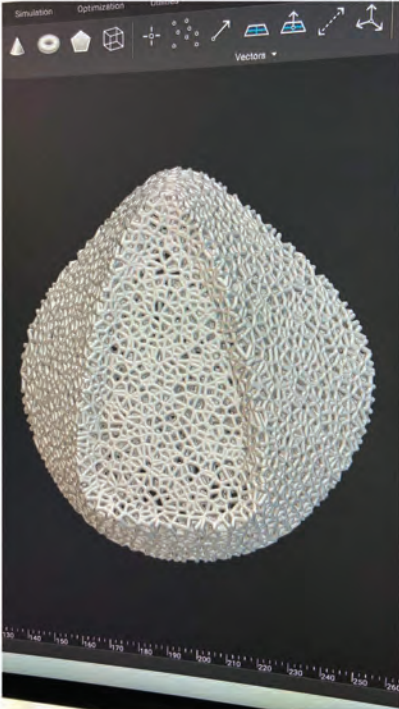
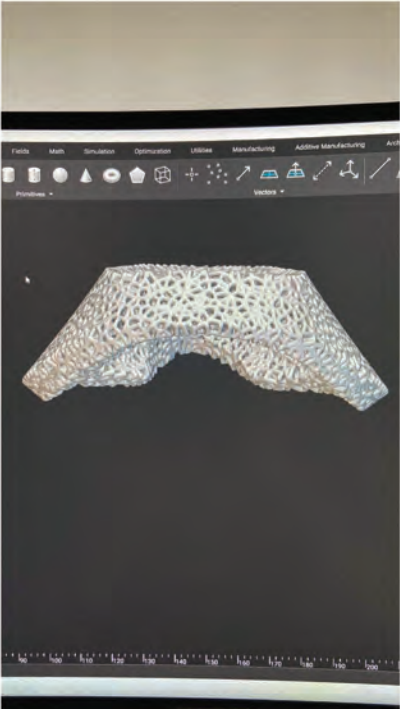
Week 13

TITLE : ntop learning

WEEK : 13

PAGE : 121

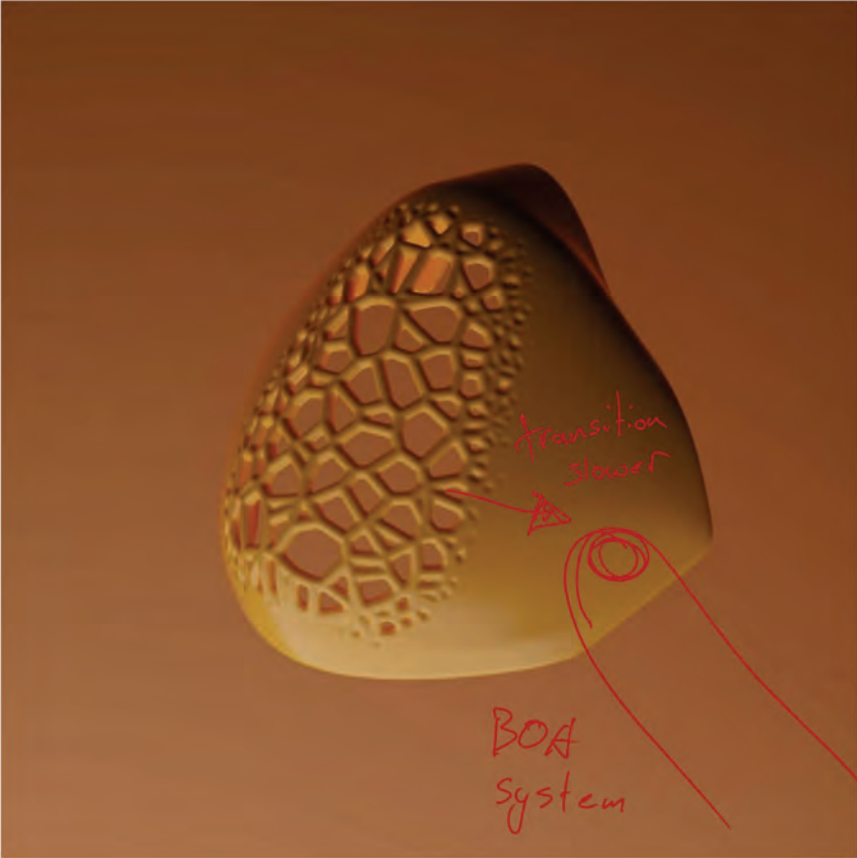
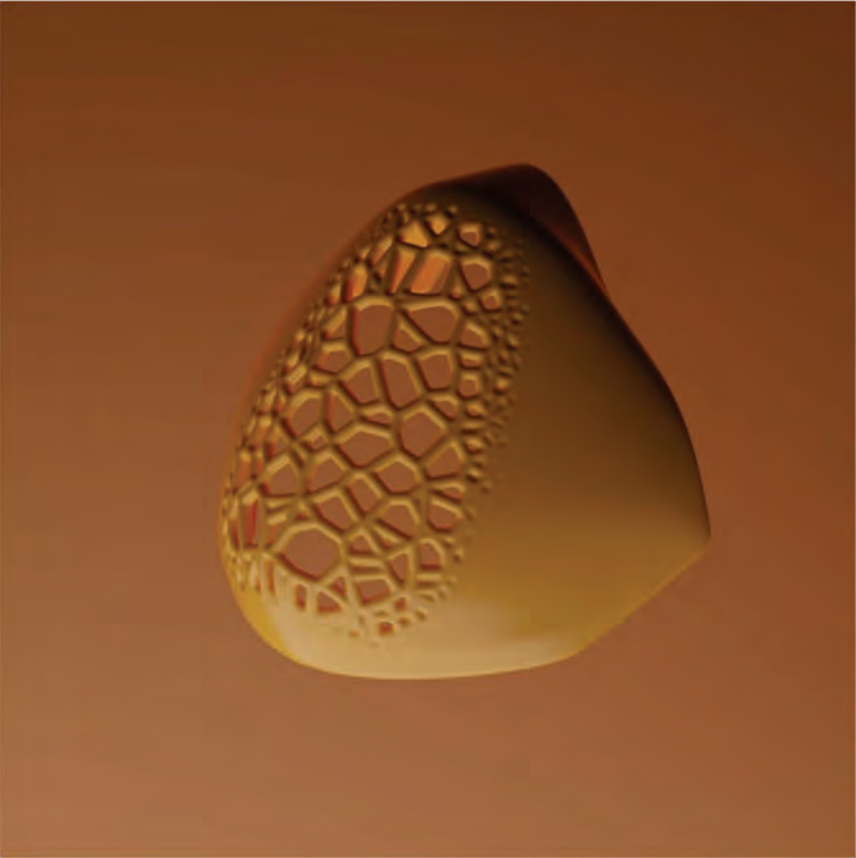
RELATED PAGES/RESEARCH:



DARCY DUCKWORTH

TITLE : Concepts
WEEK : 13
PAGE : 122

RELATED PAGES/RESEARCH:



TITLE : BOA mechanism

WEEK :

PAGE : 1 2 3

RELATED PAGES/RESEARCH:

8:35 am Wed 25 Oct boafit.com 29%



L-SERIES: MULTIDIRECTIONAL PRECISION FIT + FAST RELEASE

Featured on: Li2, IP1

-  PUSH IN TO ENGAGE
-  TURN TO TIGHTEN
-  TURN TO LOOSEN
-  PULL UP FOR FAST RELEASE



Strap design that can use top heel strap.

DARCY DUCKWORTH

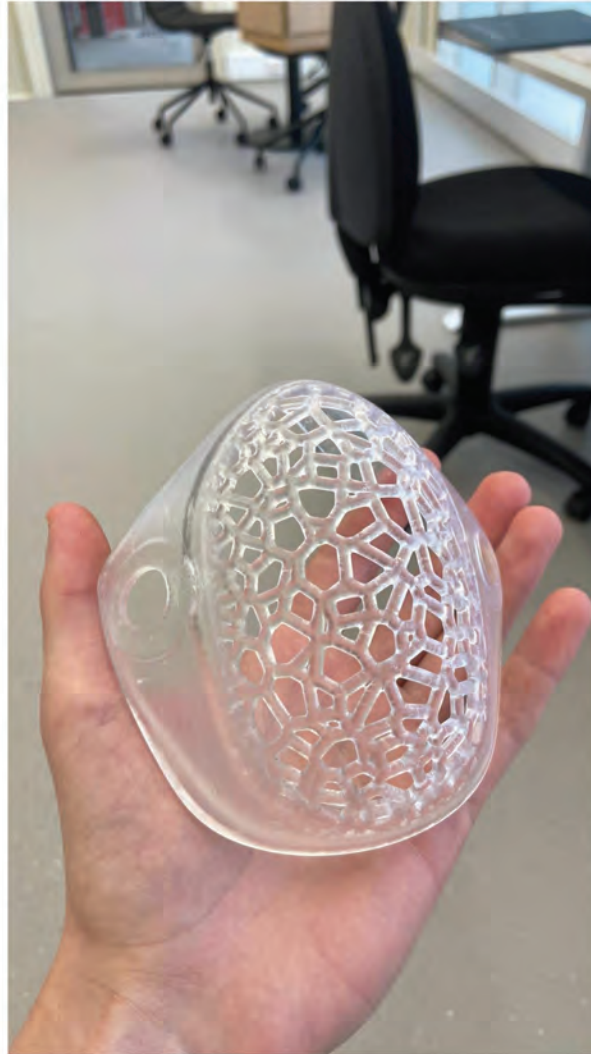
Week 14

TITLE : *mash model vs render*

WEEK : 14

PAGE : 124

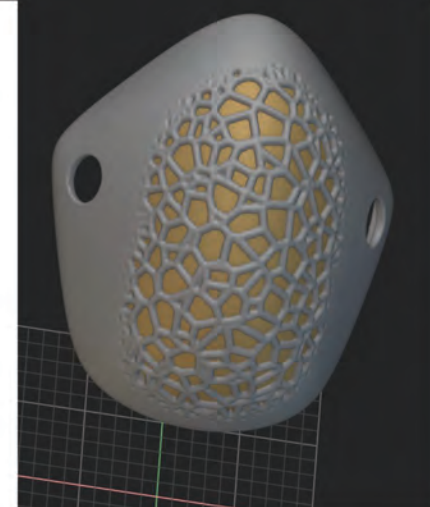
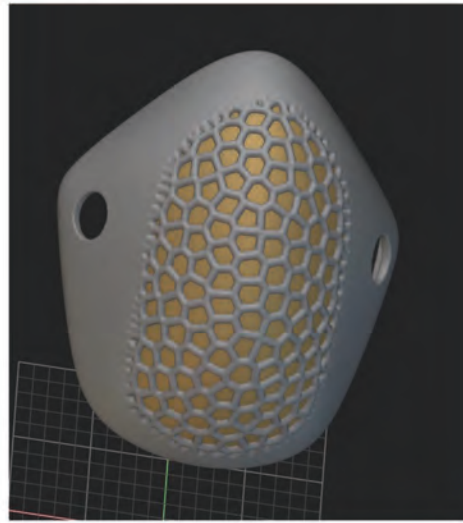
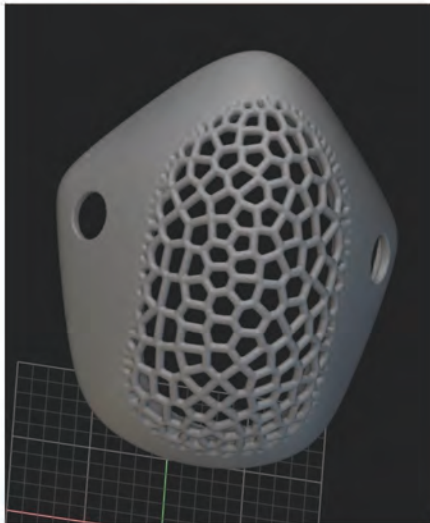
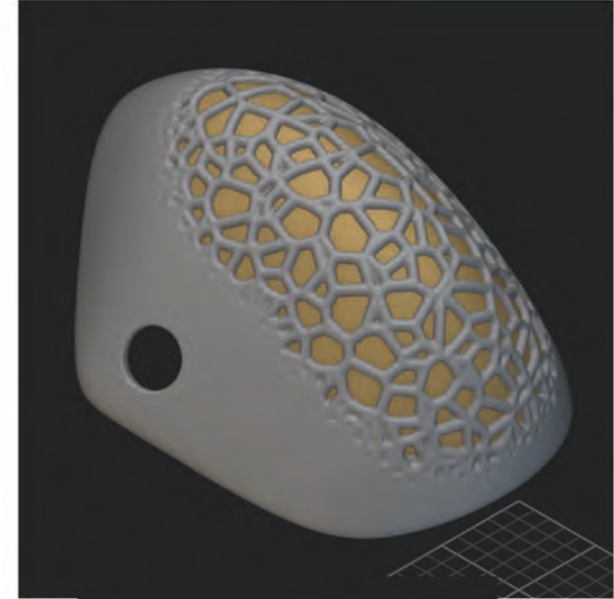
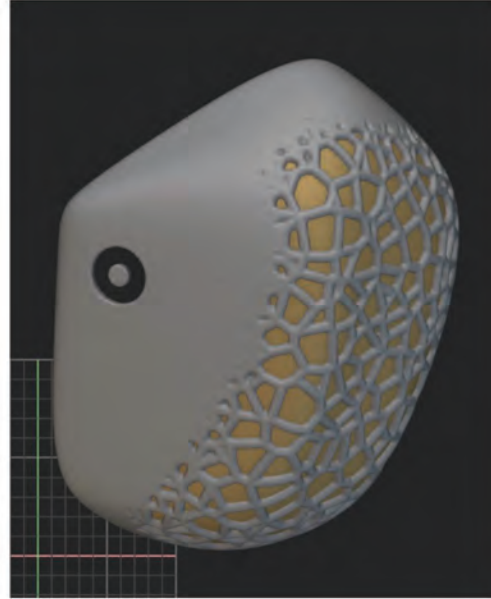
RELATED PAGES/RESEARCH:



DARCY DUCKWORTH

TITLE : *alternatives shapes*
WEEK : 14 *and patterns*
PAGE : 125

RELATED PAGES/RESEARCH:



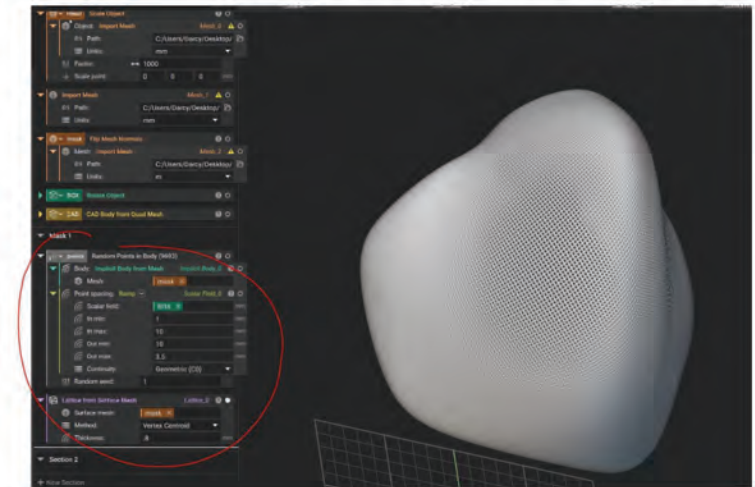
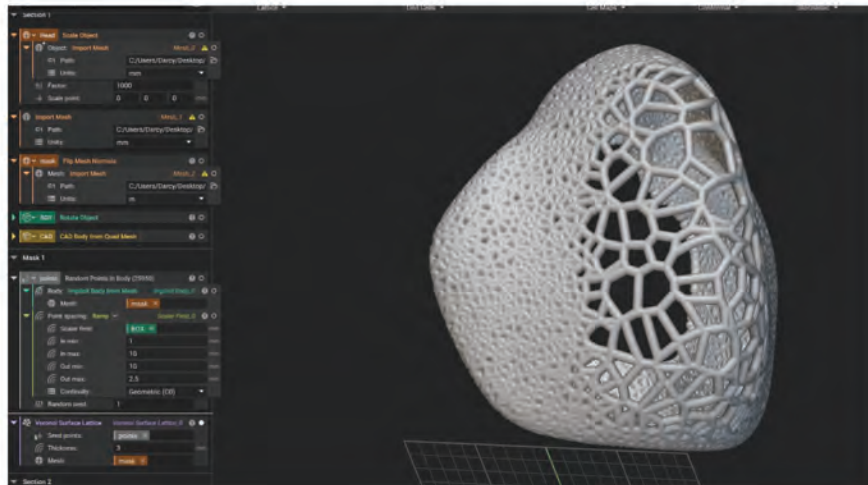
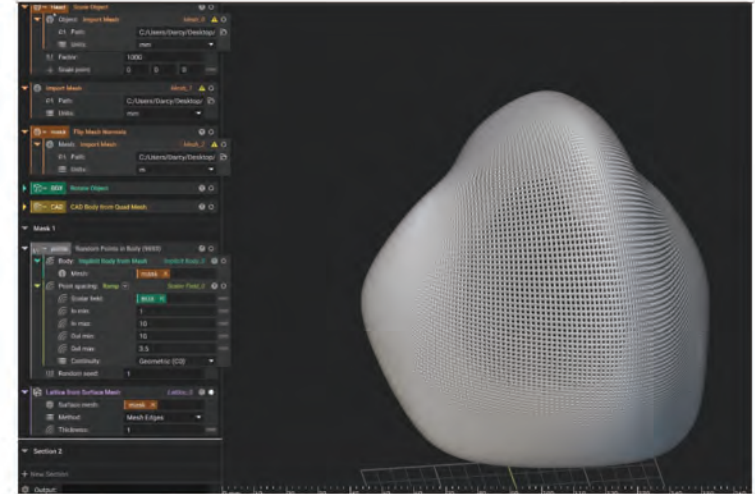
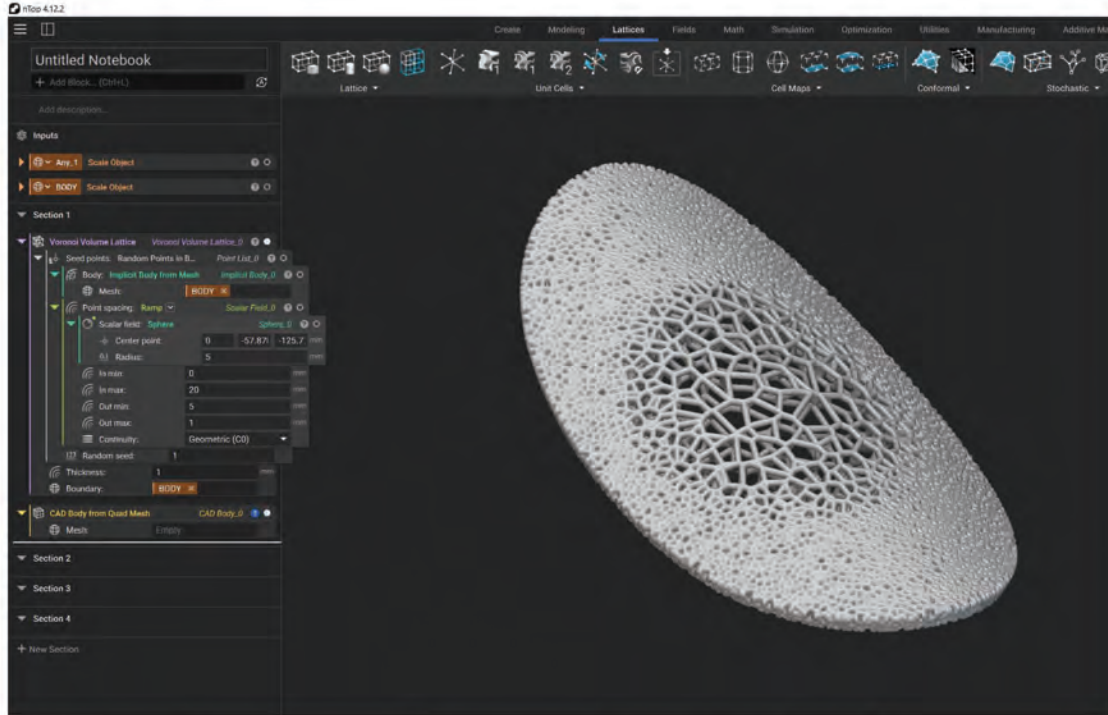
DARCY DUCKWORTH

TITLE : *Concepts exploration*

WEEK : 14

PAGE : 126

RELATED PAGES/RESEARCH:



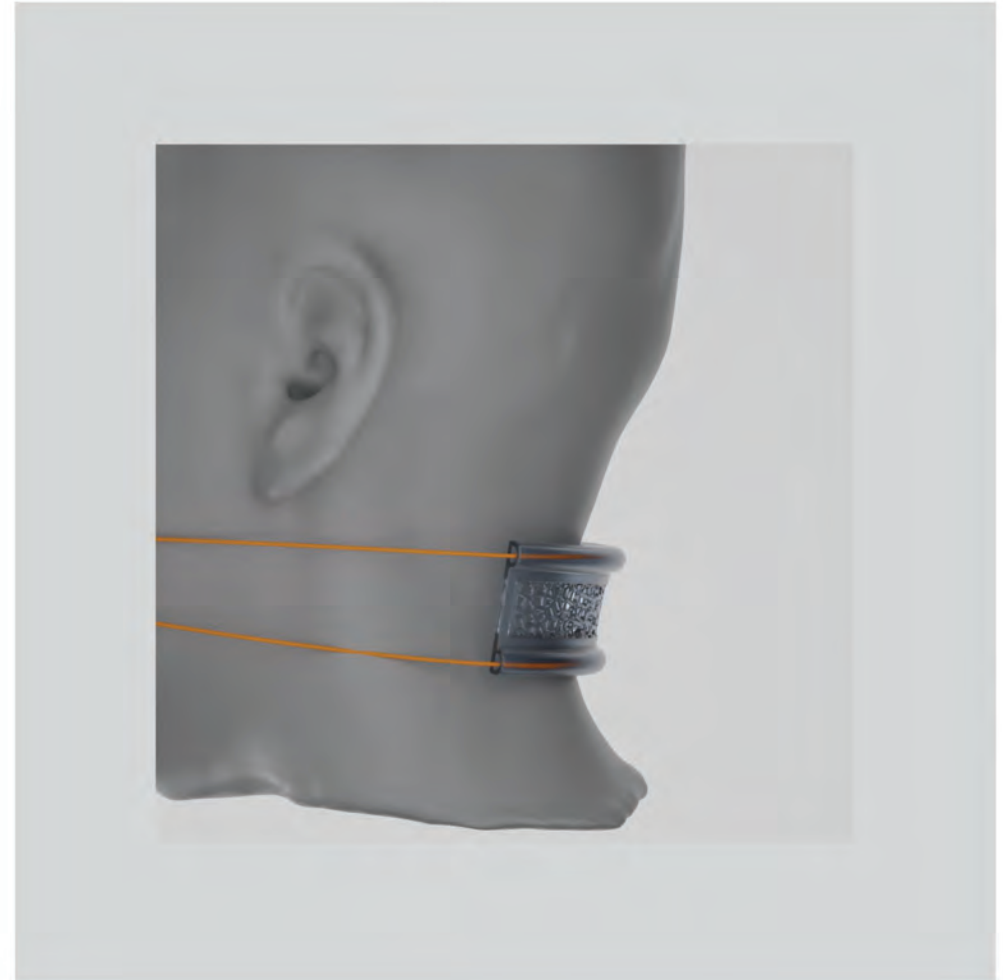
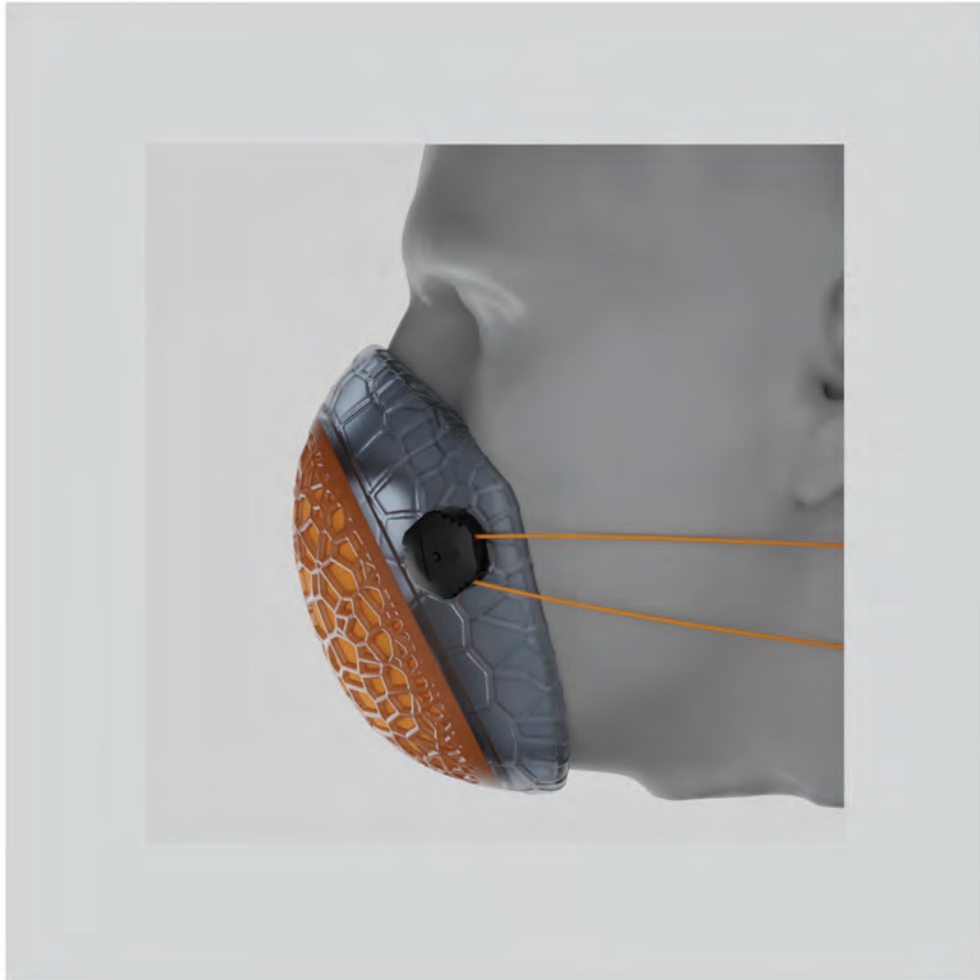
DARCY DUCKWORTH

TITLE : *renders*

WEEK : 14

PAGE : 127

RELATED PAGES/RESEARCH:



DARCY DUCKWORTH

TITLE : *renders*
WEEK : 14
PAGE : 128

RELATED PAGES/RESEARCH:



DARCY DUCKWORTH

TITLE : *render*

WEEK : 14

PAGE : 129

RELATED PAGES/RESEARCH:



DARCY DUCKWORTH

TITLE : renders

WEEK : 14

PAGE : 130

RELATED PAGES/RESEARCH:



DARCY DUCKWORTH