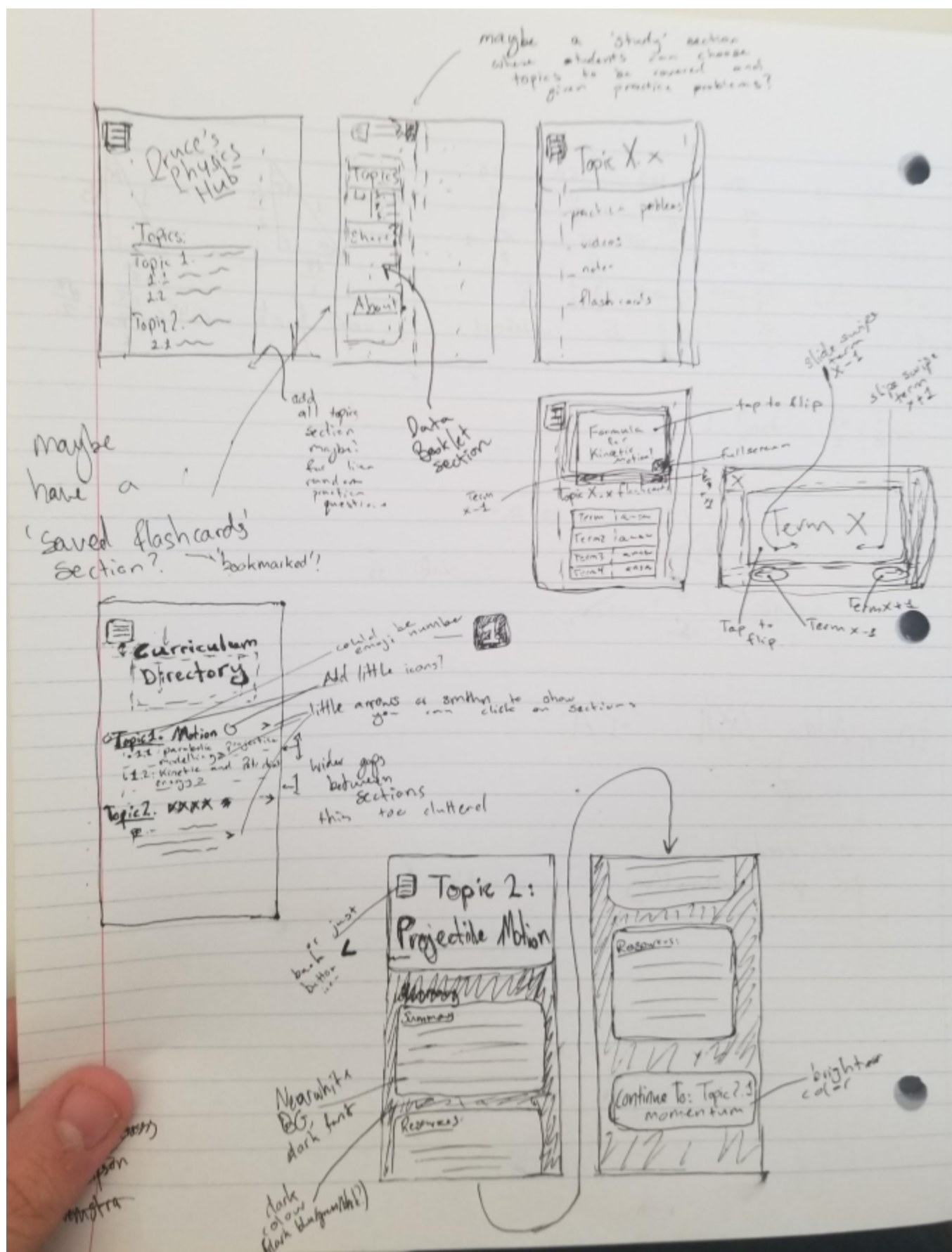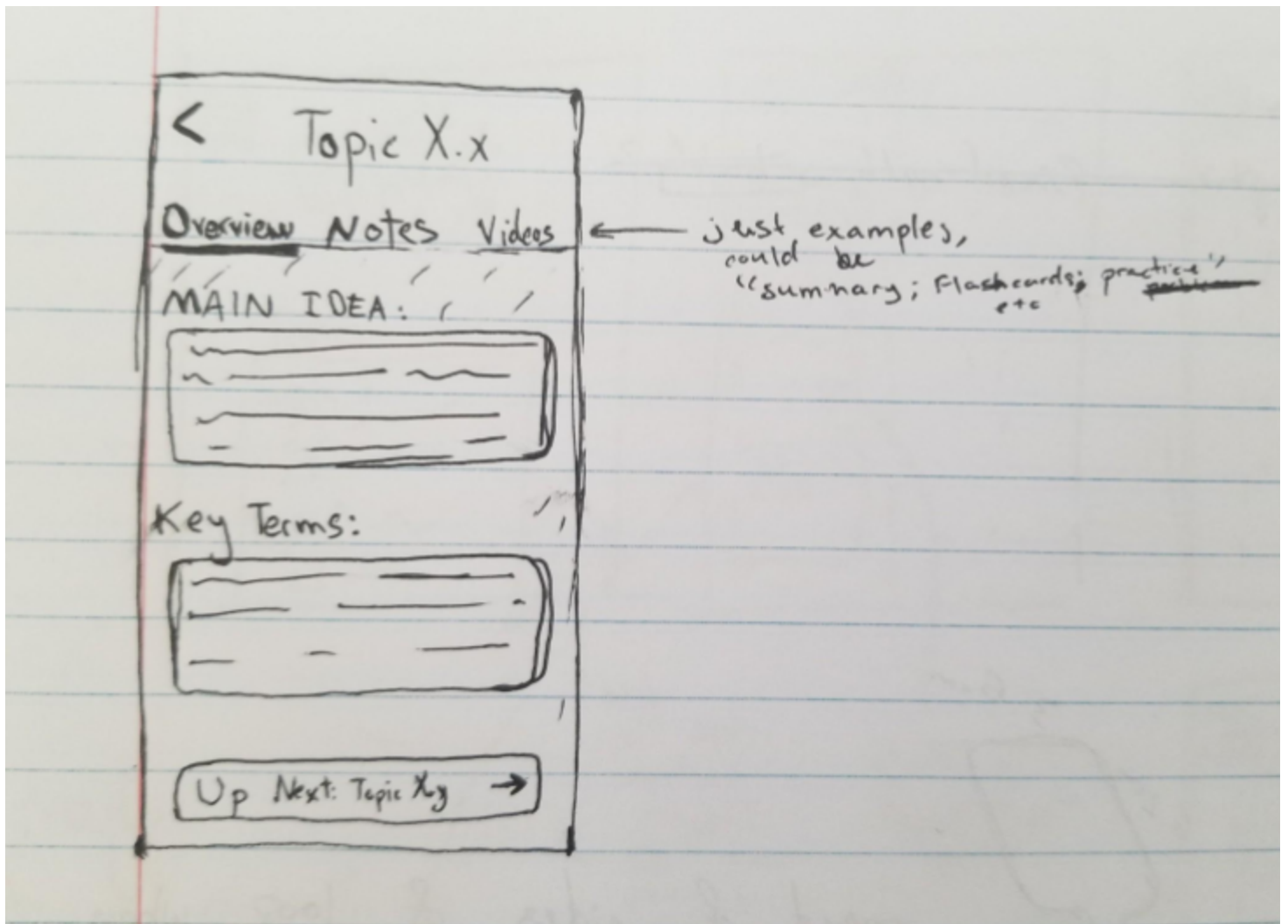# Criteria B: Design

Test Plan:
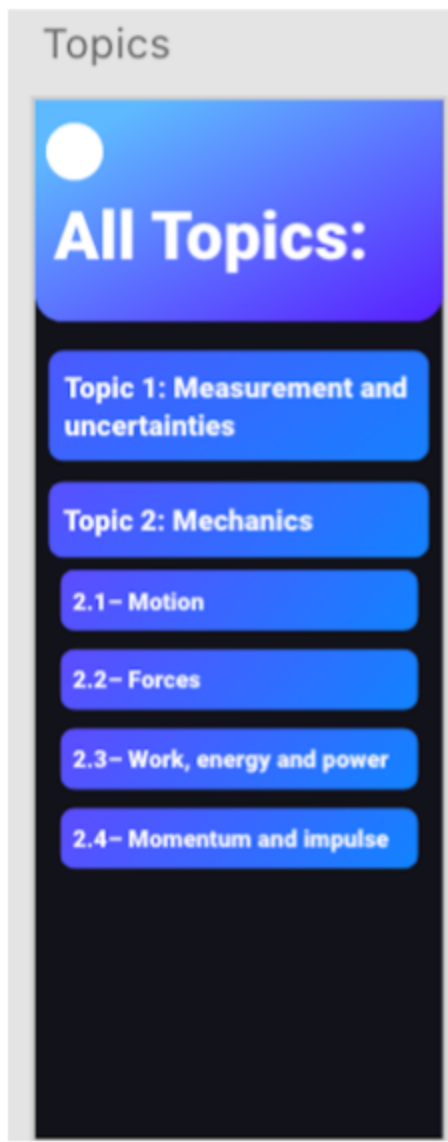
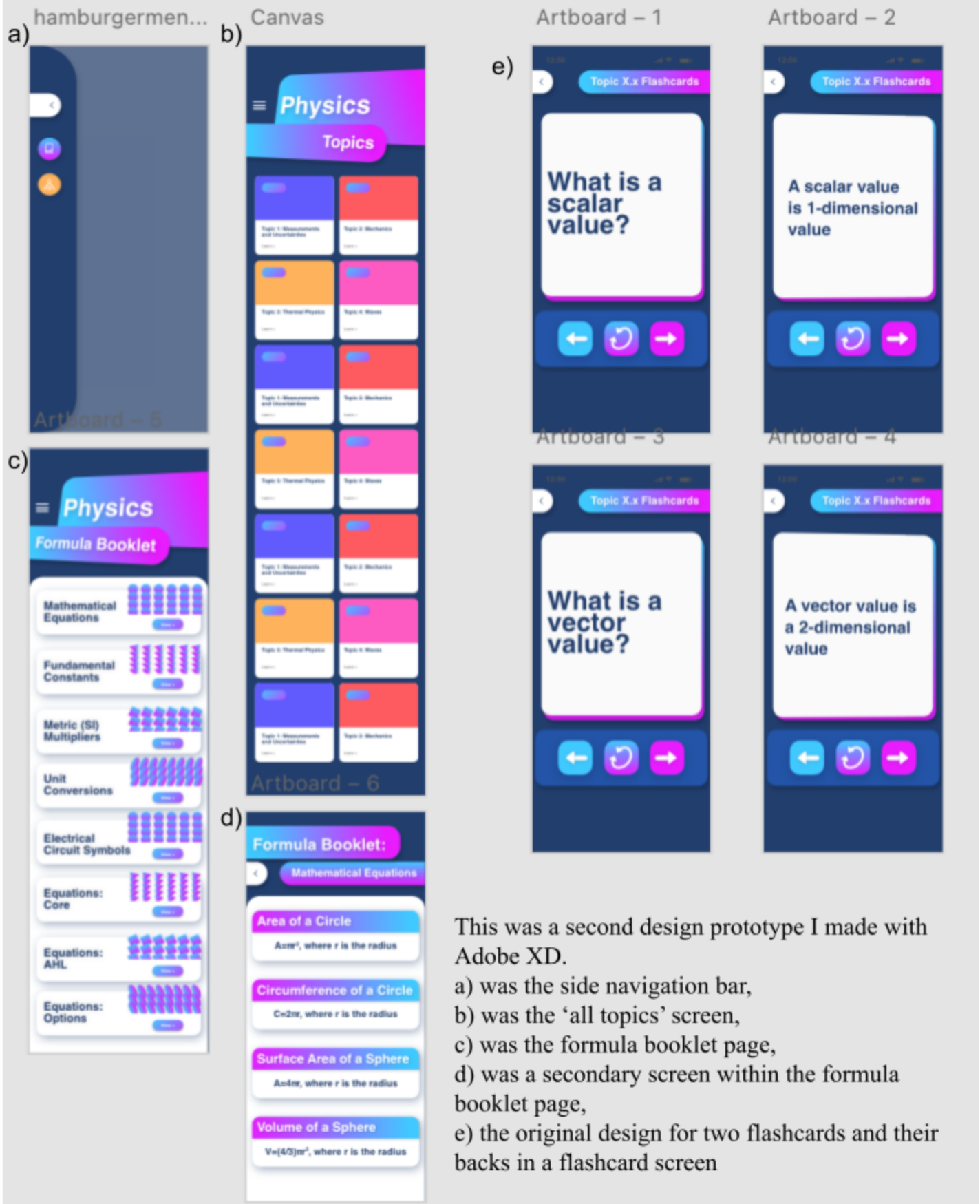| Test Type	Nature of Test	Example
Users will be able to access flashcards specific to IB Physics topics.	Click on a topic, expect to see flashcards for the topic	Click on topic 1, see flashcards for topic 1
Users will be able to access good resources for studying each topic.	Click on topic, expect to see 'key ideas' and 'resources' cards that link to external relevant information	Click on topic 2, see summary of content in topic 2
The application will be compatible with android and ios devices.	Run applications on ios and on android.	Running on ios works
The application will be compatible with android and ios devices.	Throughout usage of the app, graphics load appropriately and are legible.	All text in the TopicsPage screen is legible; readability isn't inhibited by colors.
The application will have a digital version of the IB Physics Data Booklet.	Open the formula booklet page	The user clicks on "formula booklet", and can find formula booklet information like the Metric SI multipliers
The application will have a page listing each IB Physics SL topic.	Open the app and navigate to the topics page, making sure it lists each main IB Physics Topic	For example, the user will be able to see "Topics 2: Mechanics"

This image depicts some initial design sketches I made during the early stages of designing the app layout

This depicts one of the first layout designs I sketched for a single topic screen

Topic 2:
Mechanics

Summary
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nam eleifend felis diam, cursus interdum magna pretium ut. Integer eget porta dolor, ut rhoncus ex. Maecenas.

Key Terms
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nam eleifend felis diam, cursus interdum magna pretium ut. Integer eget porta dolor, ut rhoncus ex. Maecenas.

Resources
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nam eleifend felis diam, cursus interdum magna pretium ut. Integer eget porta dolor, ut rhoncus ex. Maecenas.

Up Next: Topic 2.1 - Motion

Topic 2.1

All Topics:

Topic 1: Measurement and uncertainties

Topic 2: Mechanics

2.1 – Motion

2.2 – Forces

2.3 – Work, energy and power

2.4 – Momentum and impulse

Topic 2.1

Topic 2.1:
Mechanics - Motion

Distance and Displacement

Distance: A scalar quantity which measures how far two locations are apart from each other along a certain path.

Displacement: A vector quantity defined by the length and direction of the line segment joining the initial and final positions of an object.

Speed and velocity

Velocity: (vector) Rate of change of displacement to time.

Speed: (scalar) rate of change of distance to time.

Velocity is a measure dependent on the motion of the observer. The relative velocity of A to B is equal to the vector subtraction of the velocity of B from the velocity of A.

Acceleration

Acceleration: (vector) Rate of change of velocity

Acceleration due to gravity of any free-falling object is given by g=9.81m/s*2. This value does not depend on the mass of the object.

Take note that acceleration is a vector and thus has a direction. If we assume the upwards direction to be positive, the acceleration due to gravity would have a negative value of g=-9.81m/s*2.

Up Next: Topic 2.2 - Forces

On the left is the first a design for a topic page I made in Adobe XD. In the middle is the initial design I developed for the 'all topics' page. On the right is a design for a sub-topic page which I ended up not including in the final product

e)

Artboard – 5

c)

Physics

Formula Booklet

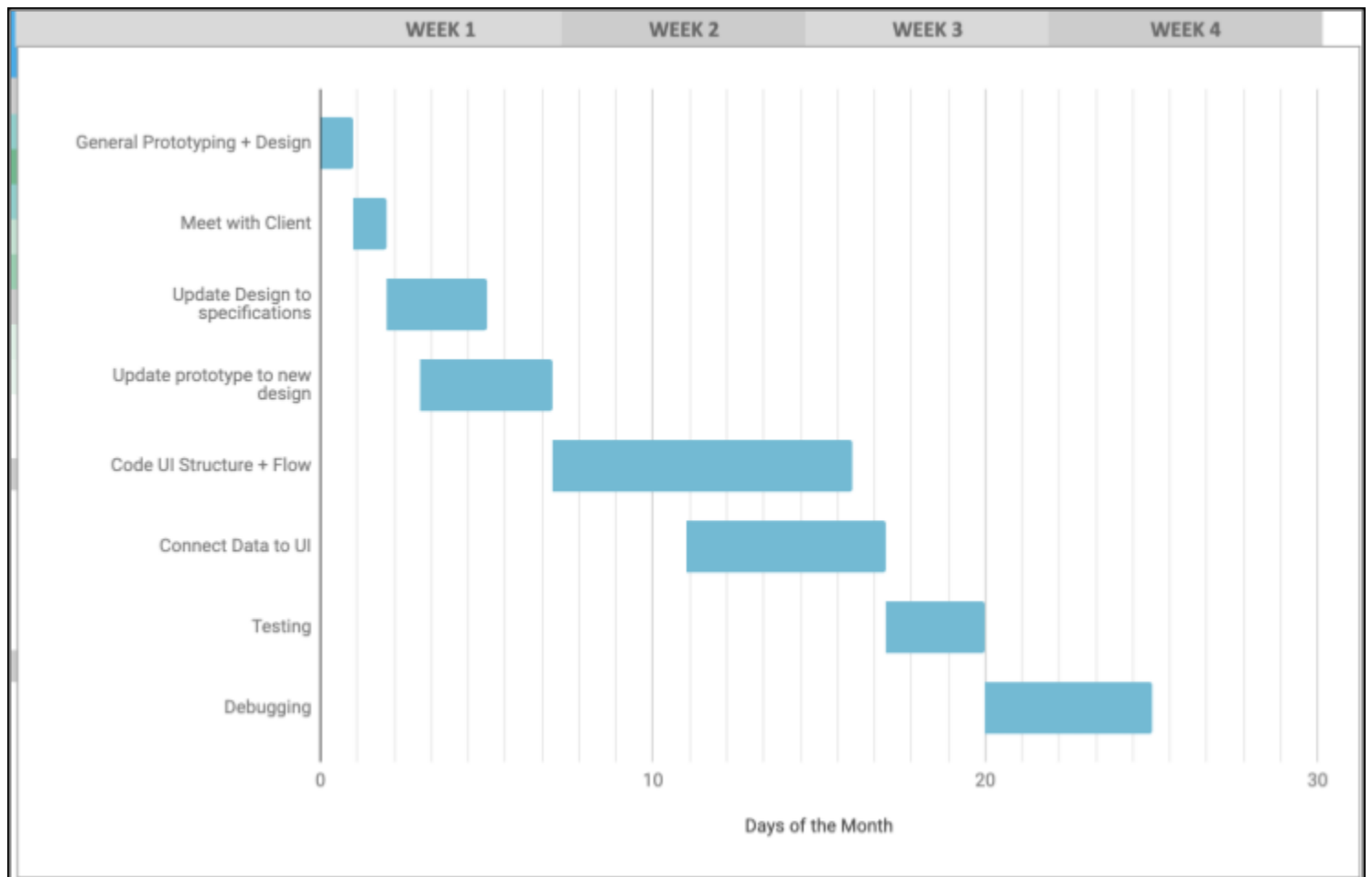|	
Mathematical Equations	
Fundamental Constants	
Metric (SI) Multipliers	
Unit Conversions	
Electrical Circuit Symbols	
Equations: Core	
Equations: AHL	
Equations: Options	

Physics

Topics

Topic 1: Measurements and Uncertainties	Topic 2: Mechanics
Topic 3: Thermal Physics	Topic 4: Waves
Topic 1: Measurements and Uncertainties	Topic 2: Mechanics
Topic 3: Thermal Physics	Topic 4: Waves
Topic 1: Measurements and Uncertainties	Topic 2: Mechanics
Topic 3: Thermal Physics	Topic 4: Waves
Topic 1: Measurements and Uncertainties	Topic 2: Mechanics

Artboard – 6

d)

Formula Booklet:

Mathematical Equations

Area of a Circle

$A=\pi r^2$, where r is the radius

Circumference of a Circle

$C=2\pi r$, where r is the radius

Surface Area of a Sphere

$A=4\pi r^2$, where r is the radius

Volume of a Sphere

$V=(4/3)\pi r^3$, where r is the radius

Artboard – 1

Topic X.x Flashcards

What is a scalar value?

Artboard – 2

Topic X.x Flashcards

A scalar value is 1-dimensional value

Artboard – 3

Topic X.x Flashcards

What is a vector value?

Artboard – 4

Topic X.x Flashcards

A vector value is a 2-dimensional value

This was a second design prototype I made with Adobe XD.

a) was the side navigation bar,

b) was the 'all topics' screen,

c) was the formula booklet page,

d) was a secondary screen within the formula booklet page,

e) the original design for two flashcards and their backs in a flashcard screen

This is a flowchart depicting the user experience and the flow of navigation throughout the application.

Gantt Chart showing the planned designation of tasks to complete this project over time