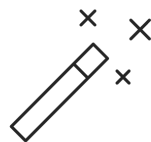
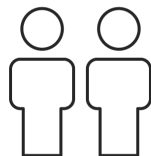
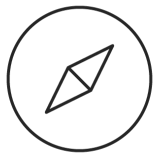




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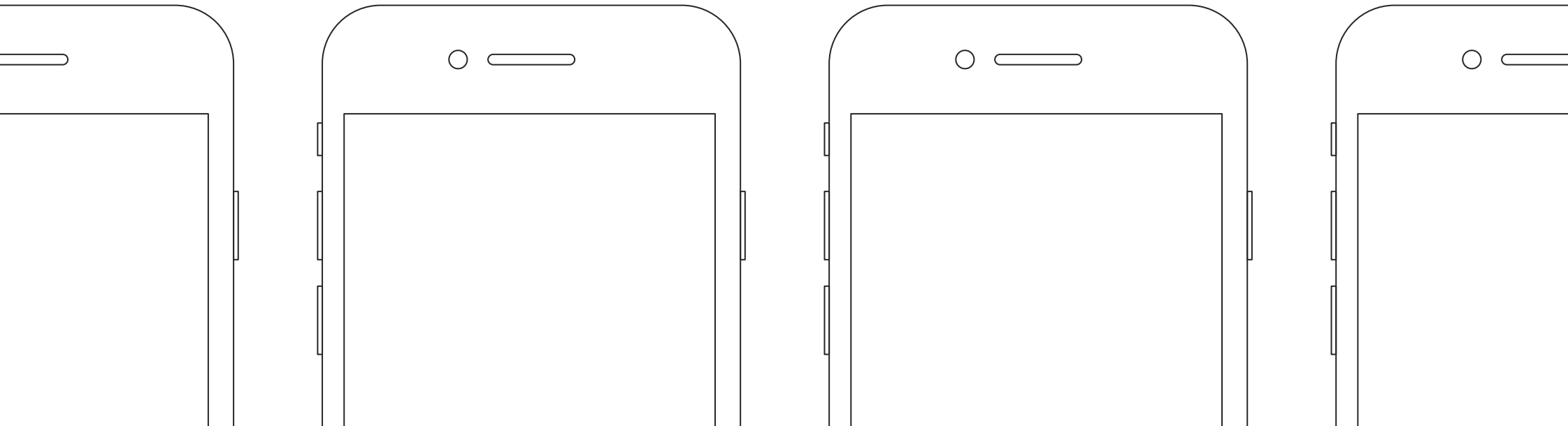
## Student workbook

# INTRODUCTION TO APP DEVELOPMENT



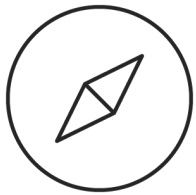
# Welcome

**In this project, you and your team will work together to design and build an app that solves a problem you care about.**



# The process

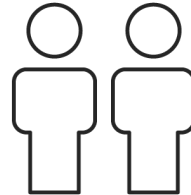
You will work your way through a range of activities, split across 5 modules.



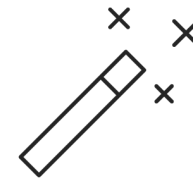
1. Crash course



2. Idea generation



3. Scoping



4. Product development



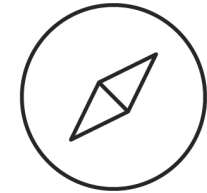
5. Pitch



## MODULE 1

# CRASH COURSE

---



### Session 1

#### Launch

#### Activity

- 1.1 – [Enter project details](#)
- 1.2 – [Sign the co-founder agreement](#)
- 1.3 – [Understand team roles](#)
- 1.4 – [Agree team roles](#)
- 1.5 – [Review existing apps](#)
- 1.6 – [Create a wireframe prototype](#)
- 1.7 – [Think about your world](#)

## ACTIVITY 1.1

### ENTER PROJECT DETAILS

## MODULE 1

### CRASH COURSE



Basic details	Success criteria
<p>Name</p> <p>Class</p> <p>Project start date</p> <p>Project end date</p>	<p>Project</p> <p>Teamwork</p>

To get your project started, make a record of your team and project details. Set yourself some success criteria. What would you like to achieve as a result of completing this project? e.g. improve your programming skills, improving the way you communicate with others.

**NAME**

## ACTIVITY 1.2

### SIGN THE CO-FOUNDER AGREEMENT

## MODULE 1

### CRASH COURSE



Discuss these questions and tick as appropriate			Signatures and share ownership	
How will decisions get made?	<input type="checkbox"/> MAJORITY	<input type="checkbox"/> PLURALITY	SIGNED	%
How will share ownership be split?	<input type="checkbox"/> EQUALLY	<input type="checkbox"/> OTHER	SIGNED	%
What happens if a team member leaves?	<input type="checkbox"/> LOSES SHARES	<input type="checkbox"/> KEEPS SHARES	SIGNED	%
Discuss these values and tick five that are most important to the team			SIGNED	%
<input type="checkbox"/> USER-CENTRED	<input type="checkbox"/> INNOVATIVE	<input type="checkbox"/> CURIOUS	SIGNED	%
<input type="checkbox"/> CREATIVE	<input type="checkbox"/> COLLABORATIVE	<input type="checkbox"/> BUSINESS-SAVVY	SIGNED	%
<input type="checkbox"/> ETHICAL	<input type="checkbox"/> PASSIONATE	<input type="checkbox"/> HARD-WORKING	DATE	

It's important that all team members agree some things from the start. Decide how decisions will get made. 'Majority' means that a decision requires support from more than 50% of team. 'Plurality' means the largest number of voters.

**NAME**

## ACTIVITY 1.3

### UNDERSTAND TEAM ROLES

## MODULE 1

### CRASH COURSE



Organiser	Designer	Tech specialist
<input type="checkbox"/> Can do <input type="checkbox"/> Want to try  Explanation	<input type="checkbox"/> Can do <input type="checkbox"/> Want to try  Explanation	<input type="checkbox"/> Can do <input type="checkbox"/> Want to try  Explanation
Entrepreneur	Communicator	Preferred role
<input type="checkbox"/> Can do <input type="checkbox"/> Want to try  Explanation	<input type="checkbox"/> Can do <input type="checkbox"/> Want to try  Explanation	

Using the Team Role cards, review the different roles needed in a team. Which are you already able to do? Which would you like to try? Can you explain why? Use these notes to help you negotiate your role in the team for this project.

**NAME**

**ACTIVITY 1.4**  
**AGREE TEAM ROLES**

**MODULE 1**  
**CRASH COURSE**



Team name		
Organiser	Designer	Tech specialist
Entrepreneur	Communicator	

Use this page to record who is going to cover each team role. Remember, people can cover more than one role.

**NAME**



**ACTIVITY 1.5**  
**REVIEW EXISTING APPS**

**MODULE 1**  
**CRASH COURSE**



App 1	App 2
App name  Problem it solves  Who the app is for  Phone features used	App name  Problem it solves  Who the app is for  Phone features used

To help you understand what type of problems apps can solve think about two different apps you have used. For each app make a note of the problem the app is solving, who it's for, and the phone features it uses.

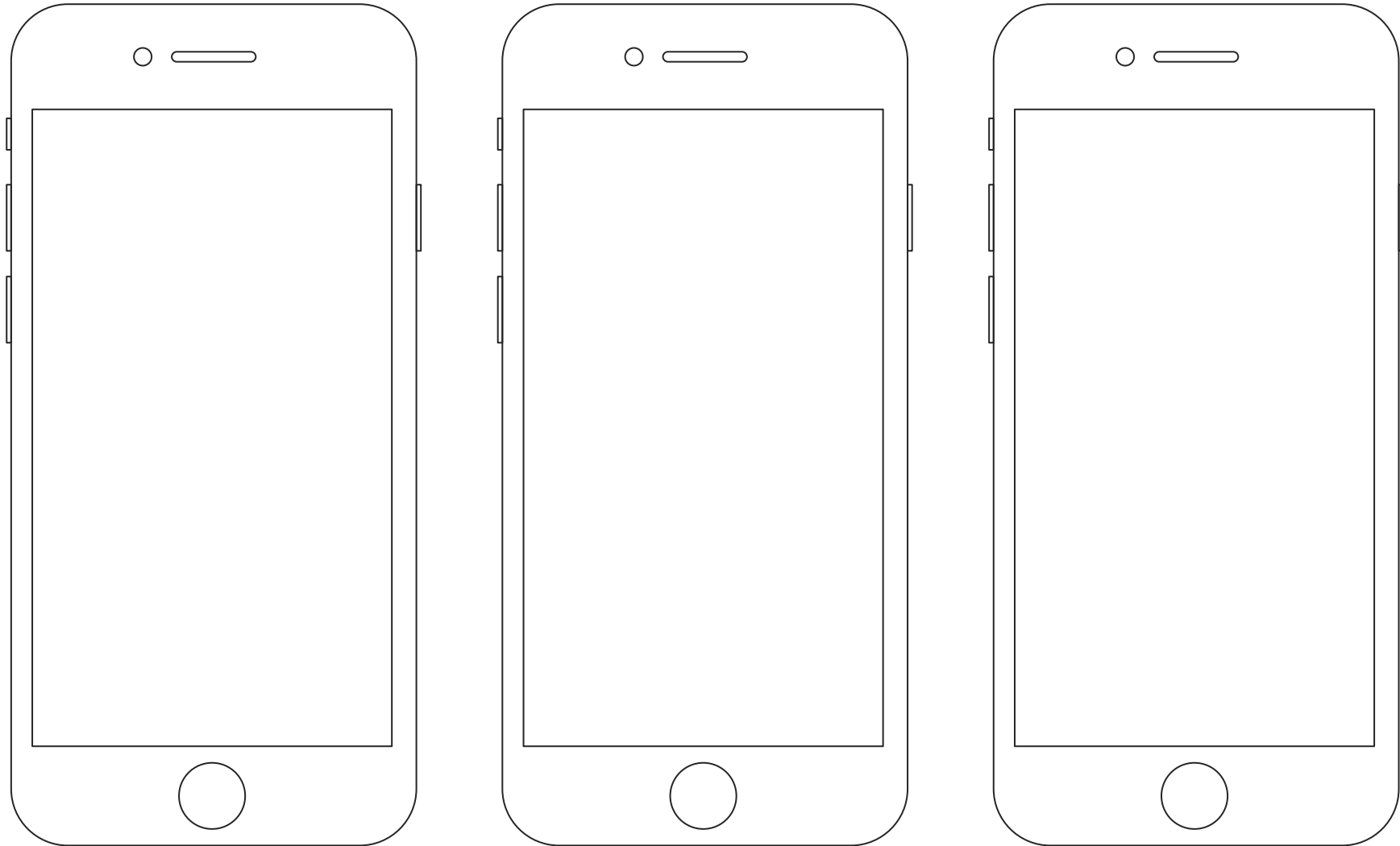
**NAME**

## ACTIVITY 1.6

### CREATE A WIREFRAME PROTOTYPE

## MODULE 1

### CRASH COURSE



Prototyping tools help us to build simple versions of our app ideas. We create prototypes so that we can share ideas with our team, and test concepts with our target users. Sketch key screens of your favourite app, then create those screens and link them together using a prototyping tool.

**NAME**

## ACTIVITY 1.7

### THINK ABOUT YOUR WORLD

## MODULE 1

### CRASH COURSE



My hobbies	Communities I belong to
My interests	Things I'm passionate about

Your hobbies and interests, the communities you belong to and the things you are passionate about may give you some ideas for problems that can be solved with an app. Discuss your ideas with your team at the start of the next session.

**NAME**

## MODULE 2

# IDEA GENERATION



---

### Session 2

What's your problem?

#### Activity

- 2.1 – [Spot possible problems](#)
- 2.2 – [Explore problems using the 5 Ws](#)
- 2.3 – [Draft mini elevator pitches](#)

---

### Session 3

Screening ideas

#### Activity

- 2.4 – [Filter through problems](#)
- 2.5 – [Conduct market research](#)
- 2.6 – [Narrow to 3 elevator pitches](#)
- 2.7 – [Choose an app idea to take forward](#)

## ACTIVITY 2.1

### SPOT POSSIBLE PROBLEMS

## MODULE 2

### IDEA GENERATION



Problem	Problem	Problem
Who it affects  <input type="checkbox"/> MANY APPS SOLVE THIS PROBLEM	Who it affects  <input type="checkbox"/> MANY APPS SOLVE THIS PROBLEM	Who it affects  <input type="checkbox"/> MANY APPS SOLVE THIS PROBLEM
Problem	Problem	Problem
Who it affects  <input type="checkbox"/> MANY APPS SOLVE THIS PROBLEM	Who it affects  <input type="checkbox"/> MANY APPS SOLVE THIS PROBLEM	Who it affects  <input type="checkbox"/> MANY APPS SOLVE THIS PROBLEM

Designing a successful app starts with finding a real problem that needs a solution. Brainstorm problem ideas with your team and record them here. It is worth having a quick check at this stage to see if whether the market is already full of apps addressing the problem you have identified.

**NAME**

## ACTIVITY 2.2

### EXPLORE PROBLEMS USING THE 5 WS

## MODULE 2

### IDEA GENERATION



Problem	Who?	What?
Where?	When?	Why?

You'll need to understand the problems you've identified inside and out. Divide your problem ideas up amongst your team and note down the 5Ws below for each.

**NAME**

## ACTIVITY 2.3

### DRAFT MINI ELEVATOR PITCHES

## MODULE 2

### IDEA GENERATION



<b>Pitch idea</b>	
Our team is called...	
We're creating...	<i>(the type of app)</i>
aimed at...	<i>(the target user)</i>
to help them to...	<i>(the problem / challenge)</i>
by providing them with...	<i>(the possible solution)</i>

Turn problems into product ideas with a mini 'elevator pitch'. As an example. "Our team is called Zen Studio. We're creating a native app aimed at students to help them to wake up earlier by providing them with incentives to get up."

**NAME**

**ACTIVITY 2.4**

**FILTER THROUGH PROBLEMS**

**MODULE 2**

**IDEA GENERATION**



*Mass market ideas*

Lots of people affected

*Game-changing ideas*

Low impact on people's lives

High impact on people's lives

*Low appeal ideas*

Few people affected

*Niche ideas*

If you're going to invest time in designing an app, you need to be sure your problem is worth solving. For the problems you've identified, consider how many people it impacts, and level of impact, then plot each problem in the 2x2 grid. Problems bottom left are unlikely to be successful.

**NAME**




## ACTIVITY 2.5

### CONDUCT MARKET RESEARCH

## MODULE 2

### IDEA GENERATION



<b>App idea</b>		Number of similar apps <input type="checkbox"/> None <input type="checkbox"/> Up to 5 <input type="checkbox"/> More than 5	
<b>For the existing app closest to your app idea complete the following</b>			
Name of app	Price	Number of downloads	App rating 
Target user	Features meeting user needs	App reviews	

There's little point in designing an app that offers something someone else is already doing well. You need to make sure you know who your competitors are. Divide your mini elevator pitches amongst your team. For each, find related apps that are already available.

**NAME**

## ACTIVITY 2.6

### NARROW TO 3 ELEVATOR PITCHES

## MODULE 2

### IDEA GENERATION



App idea 1	App idea 2	App idea 3
App name	App name	App name
Elevator pitch	Elevator pitch	Elevator pitch

Based on your work so far, focus in on three elevator pitches. Choose the strongest ideas, or start to eliminate ideas. This could be because they are not technically feasible, or plenty of similar apps might exist.

**NAME**

## ACTIVITY 2.7

### CHOOSE AN IDEA TO TAKE FORWARD

## MODULE 2

### IDEA GENERATION



App idea 1	App idea 2	App idea 3																																																												
<p>App name</p>   <p>Number of people affected</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table> <p>Level of impact on people's lives</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table> <p>Technical feasibility of idea</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table> <p>Understanding of the problem</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table>																					<p>App name</p>   <p>Number of people affected</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table> <p>Level of impact on people's lives</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table> <p>Technical feasibility of idea</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table> <p>Understanding of the problem</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table>																					<p>App name</p>   <p>Number of people affected</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table> <p>Level of impact on people's lives</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table> <p>Technical feasibility of idea</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table> <p>Understanding of the problem</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table>																				

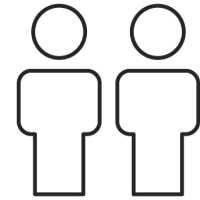
Decide which of your ideas to develop into an app. Grade each app idea based on the criteria above. Circle or tick the app idea you have chosen to take forward.

**NAME**

## MODULE 3

# SCOPING

---



### Session 4

Get to know your  
users

### Activity

- 3.1 – [Create a user profile](#)
- 3.2 – [List user needs and features](#)
- 3.3 – [Conduct a user survey](#)

**ACTIVITY 3.1****CREATE A USER PROFILE****MODULE 3****SCOPING**

<b>Basic details</b>	<b>Drivers</b>	<b>App preferences</b>
Name           Age           Occupation           Location           	Key goals           Big frustrations           	Favourite app and why           Least favourite app and why           

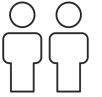
To make sure your app's features are fit for purpose, you need to have a very clear idea of who your user is and what they want. A user profile helps you capture basic details about the person you are designing for.

**NAME**

## ACTIVITY 3.2

### LIST USER NEEDS AND FEATURES

## MODULE 3 SCOPING



User need	User need	User need
Feature idea	Feature idea	Feature idea
User need	User need	User need
Feature idea	Feature idea	Feature idea

Explore your user's needs in more detail. Try to come up with ideas for features that could meet those needs.

**NAME**

### ACTIVITY 3.3

## CONDUCT A USER SURVEY

### MODULE 3

## SCOPING



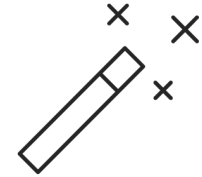
Questions for the survey	Key results from the survey

Create a survey to find out more about potential users. Use pen, paper, and a clipboard to run your survey. Or use an online form builder, such as [Google Forms](#), [Wufoo](#), [SurveyMonkey](#), or [Typeform](#).

**NAME**

## MODULE 4

# PRODUCT DEVELOPMENT



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### Session 5

MVP planning

#### Activities

4.1 – [Evaluate product features](#)

4.2 – [Design MVP](#)

---

### Session 6

Tech feasibility

#### Activity

4.3 – [Assess technical feasibility](#)

---

### Session 7

Build MVP

#### Activity

4.4 – [Reflect on prototyping tool](#)

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### Session 8

User testing

#### Activities

4.5 – [Plan a user test](#)

4.6 – [Conduct a user test](#)

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### Session 9

Who will pay?

#### Activity

4.7 – [Develop the business model](#)

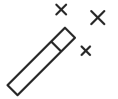


**ACTIVITY 4.1**

**EVALUATE PRODUCT FEATURES**

**MODULE 4**

**PRODUCT DEVELOPMENT**



*Features to simplify*

**Most useful features**

*MVP features*

**Unfeasible (Tech & Data)**

**Feasible (Tech & Data)**

*Non-essential features*

**Least useful features**

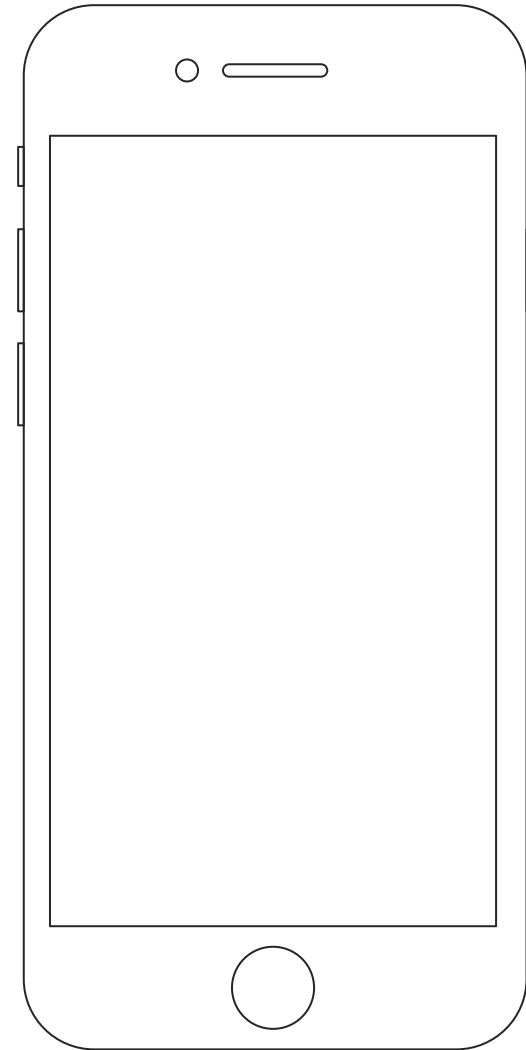
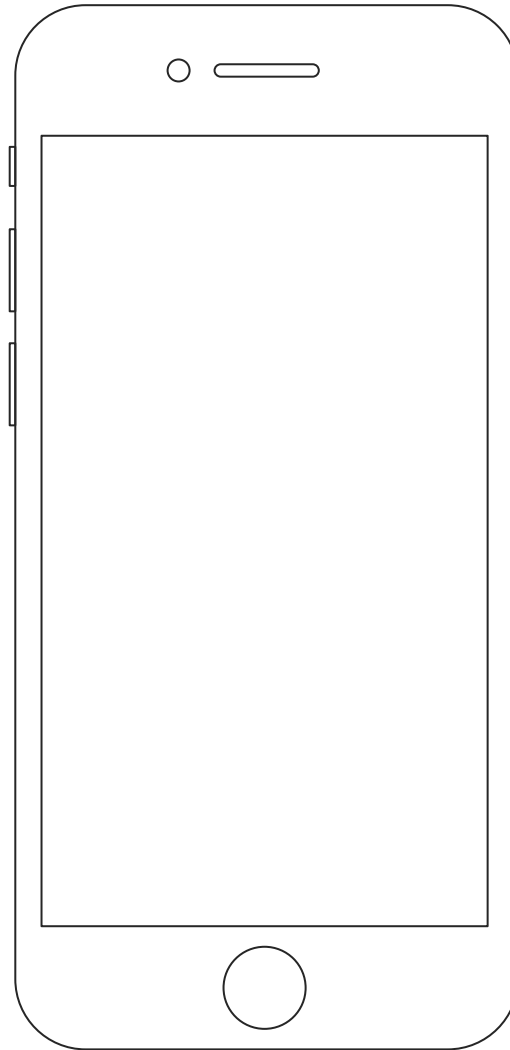
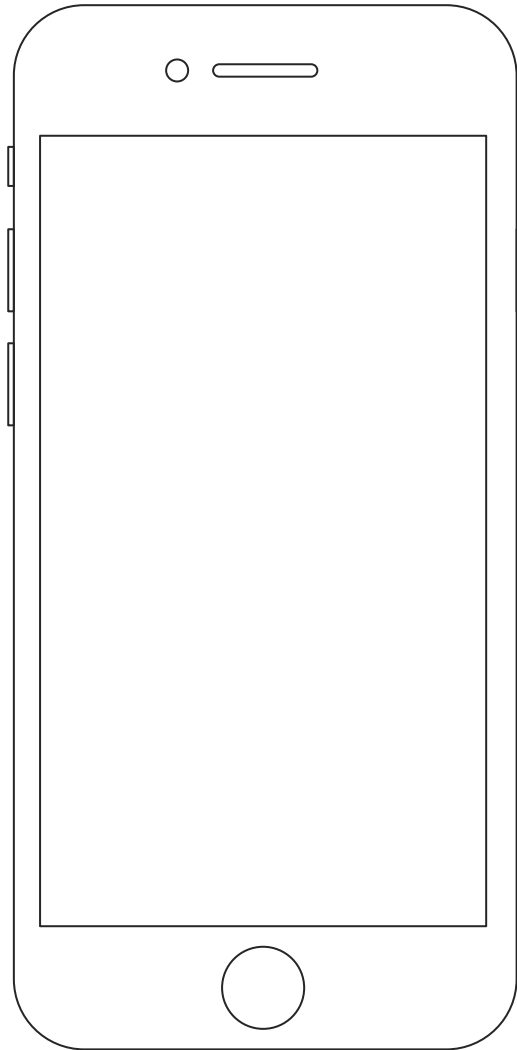
*For future versions*

You need an app that has at least one essential feature for your user, and that feature needs to be technically feasible. Review your list of possible features and decide where on this grid they belong. Are these features essential? Are they technically feasible?

**NAME**

**ACTIVITY 4.2**  
**DESIGN MVP**

**MODULE 4**  
**PRODUCT DEVELOPMENT**

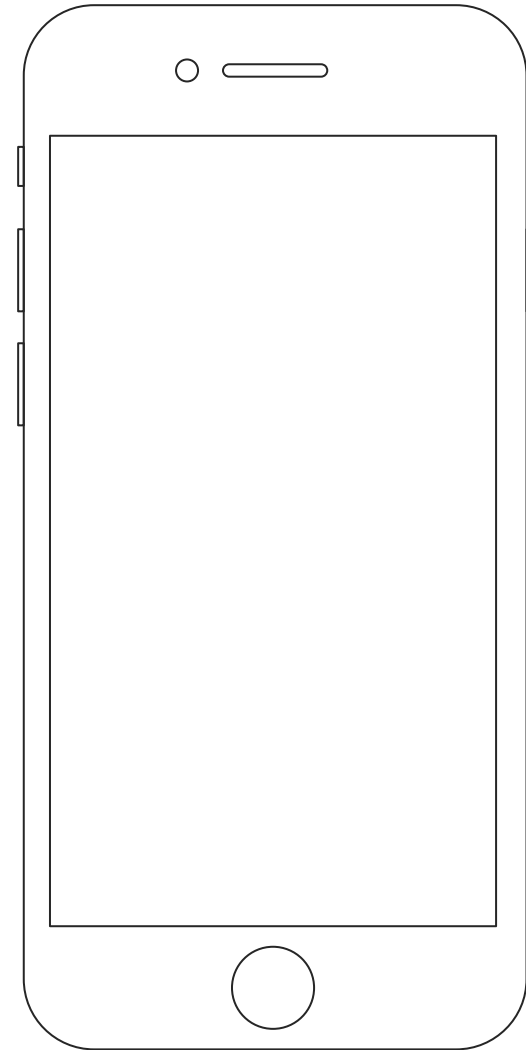
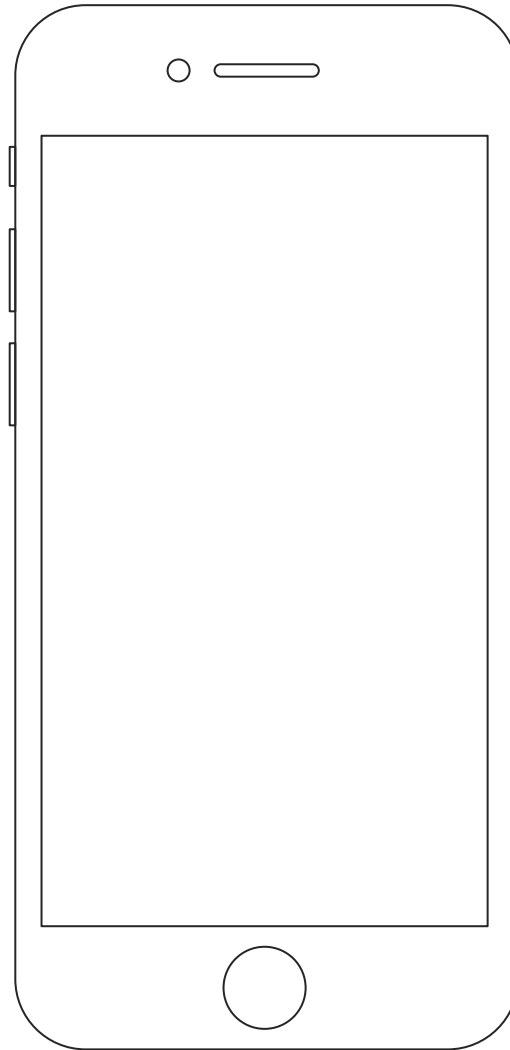
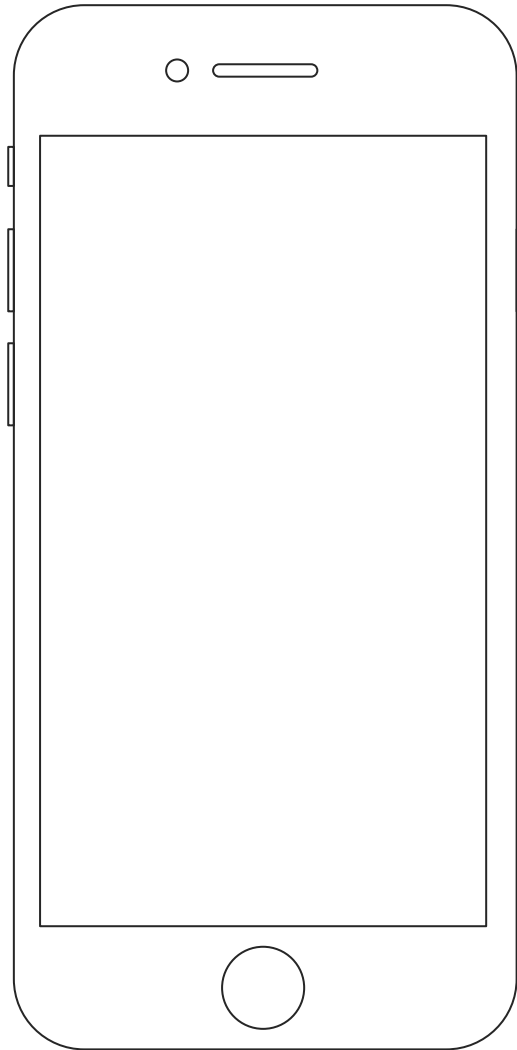
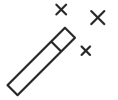


Thinking about essential and feasible features, sketch out how you want your screens to look. Consider what the user sees when they open the app, and how they move through screens and use important features.

**NAME**

**ACTIVITY 4.2**  
**DESIGN MVP**

**MODULE 4**  
**PRODUCT DEVELOPMENT**



Thinking about essential and feasible features, sketch out how you want your screens to look. Consider what the user sees when they open the app, and how they move through screens and use important features.

**NAME**

## ACTIVITY 4.3

### ASSESS TECHNICAL FEASIBILITY

## MODULE 4

### PRODUCT DEVELOPMENT



DATA INPUT	PROCESS	OUTPUT
What data do you need for the desired output?	What do you need to do to the input data to achieve the desired output?	What is the desired output of your app?
<b>Next steps</b>		

At this stage in the design process, researching technical feasibility of your app and how to prototype it will be invaluable.

**NAME**

## ACTIVITY 4.4

### REFLECT ON PROTOTYPING TOOL

## MODULE 4

### PRODUCT DEVELOPMENT



Tools used	
Things this tool did well	Ways this tool could have been better
<b>Prototyping tools you'd like to try and why</b>	

Through prototyping, we can turn ideas into something tangible. Reflect on the tool you used, noting down any tools you'd like to try.

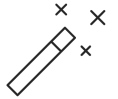
**NAME**

## ACTIVITY 4.5

### PLAN A USER TEST

## MODULE 4

### PRODUCT DEVELOPMENT



<b>What do you want feedback on?</b>	<b>What do you want feedback on?</b>	<b>What do you want feedback on?</b>
What will you ask the tester to do?	What will you ask the tester to do?	What will you ask the tester to do?
<b>What do you want feedback on?</b>	<b>What do you want feedback on?</b>	<b>What do you want feedback on?</b>
What will you ask the tester to do?	What will you ask the tester to do?	What will you ask the tester to do?

Consider what you want to learn about your idea and prototype. Do you want to test the overall proposition? Do you want to test some functionality, such as the sign up flow, or how well a user finds a particular feature?

**NAME**

## ACTIVITY 4.6

### CONDUCT A USER TEST

## MODULE 4

### PRODUCT DEVELOPMENT



<b>Person we're testing with</b>		<input type="checkbox"/> Real test	<input type="checkbox"/> Role play
<b>Positives</b>	<b>Suggested improvements</b>		
<b>Next steps</b>			

Find time to conduct the test. Inform the test subject of how long it will take, and thank them for their time. Make notes of the feedback.

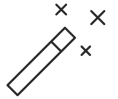
**NAME**

## ACTIVITY 4.7

### DEVELOP THE BUSINESS MODEL

## MODULE 4

### PRODUCT DEVELOPMENT



<b>Free with adverts</b>	<b>In-app purchases</b>
What might your user be interested in buying?	What in-app purchases could you offer?
<b>Freemium</b>	<b>Paid for app</b>
What free features could work as a standalone app?	What in your app is worth paying for?
<b>Chosen business model(s)</b>	

Think about how you will make money from your app. Identify which business models are feasible for your product. Consider all the options and remember, you could have a mix of revenue streams.

**NAME**



## MODULE 5

# PITCH

---



### Session 10

Pitch it

### Activities

- 5.1 – [Prepare your pitch](#)
- 5.2 – [Reflect on your project](#)
- 5.3 – [Teacher feedback](#)

## ACTIVITY 5.1

### PREPARE YOUR PITCH

## MODULE 5

### PITCH



App name and slogan	Our problem	Our app
Team member _____ Notes:	Team member _____ Notes:	Team member _____ Notes:
Our prototype	Target users	Conclusion
Team member _____ Notes:	Team member _____ Notes:	Team member _____ Notes:

It is now time to tell people about your app idea. Telling other people about your product and persuading them to buy it is known as pitching. Use this worksheet to divide up the presentation and allocate sections to each member of the team.

**NAME**

## ACTIVITY 5.2

### REFLECT ON YOUR PROJECT

## MODULE 5

### PITCH



What has gone well with your app development?	What could have gone better with your app development?
What has been good about how your team has worked together?	How could your team have worked better together?

Reviewing a project helps you identify what went well, and what not so well, so that you can improve how you work in your next project. It's something all tech development teams do. Review your progress against the success criteria you drew up at the start of the project.

**NAME**

**ACTIVITY 5.3**  
**TEACHER FEEDBACK**

**MODULE 5**  
**PITCH**



<b>What went well</b>	<b>Even better if</b>
<b>Targets and next steps</b>	

Your teacher will use this page to provide you with feedback.

**NAME**

# Ace, course complete!

**Making great apps requires hard work and constant improvement. App development is a journey. Where will your journey end?**

