

ENTREPRENEURS

*It's your
move*

Sustainable
Transport

Student
toolkit



ACT
Government



actsmart
schools



ACT
Government

*It's
your
move*



The challenge

Learning activity 1.1: The challenge in focus

“ Sustainable transport is fundamental to progress in realizing the promise of the 2030 Agenda for Sustainable Development and in achieving the 17 Sustainable Development Goals.

Sustainable transport supports inclusive growth, job creation, poverty reduction, access to markets, the empowerment of women, and the well-being of persons with disabilities and other vulnerable groups.

It is also essential to our efforts to fight climate change, reduce air pollution and improve road safety.

Yet despite this critical role, sustainable transport has not been given adequate recognition.

Ban Ki-moon
United Nations Secretary-General
2016

What has changed about Canberra's transport system since 2016?



Become a Transport expert!



Q1. Environmental impact: What is the impact of different types of transport on climate change?



Q2. Social impact: What transport challenges do different people encounter, and how are these overcome?



Q3. Health impact: What are the negative and positive health impacts of different types of transport?



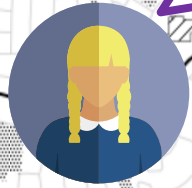
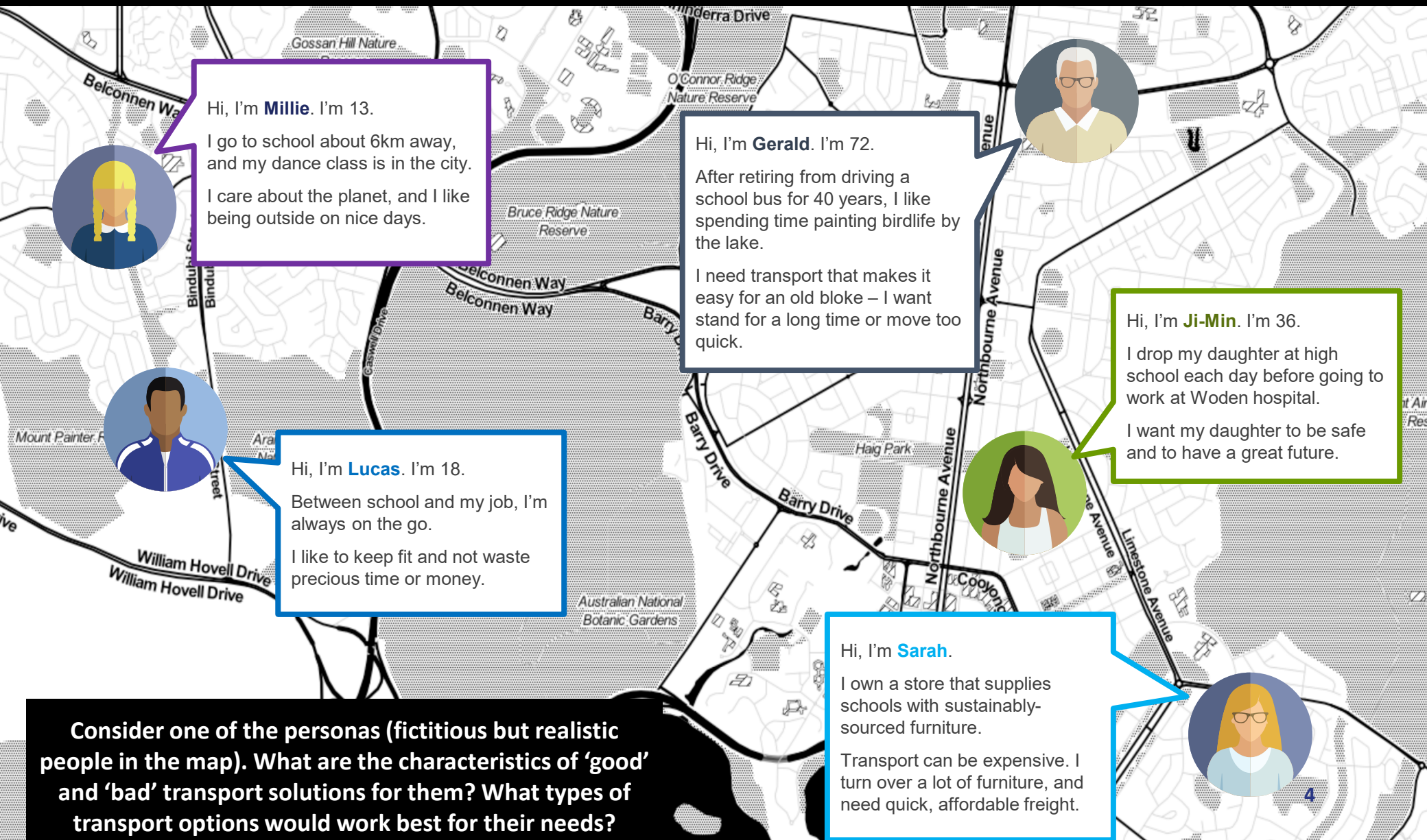
Q4. Transport in ACT: How do people travel in the ACT, and what will people need in the future?

Develop a 90-second pitch!

What	Time
Draw us in with an opening statement	0 – 10 sec
What is the problem that needs to be solved?	10 – 30 sec
Your name, explain the problem in detail and the need to act – share who's involved in making the problem happen, what transport technologies help or make it worse, what do the statistics say?	30 – 60 sec
Where are the big <i>opportunities</i> for students and the school community to tackle the problem? Don't create solutions just yet.	60 – 80 sec
Final, memorable closing statement	80 – 90 sec

The challenge

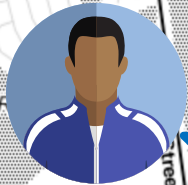
Learning activity 2.1: The traveller perspective



Hi, I'm **Millie**. I'm 13.

I go to school about 6km away, and my dance class is in the city.

I care about the planet, and I like being outside on nice days.



Hi, I'm **Lucas**. I'm 18.

Between school and my job, I'm always on the go.

I like to keep fit and not waste precious time or money.



Hi, I'm **Gerald**. I'm 72.

After retiring from driving a school bus for 40 years, I like spending time painting birdlife by the lake.

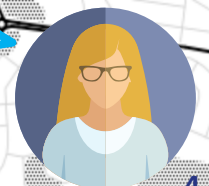
I need transport that makes it easy for an old bloke – I want stand for a long time or move too quick.



Hi, I'm **Ji-Min**. I'm 36.

I drop my daughter at high school each day before going to work at Woden hospital.

I want my daughter to be safe and to have a great future.



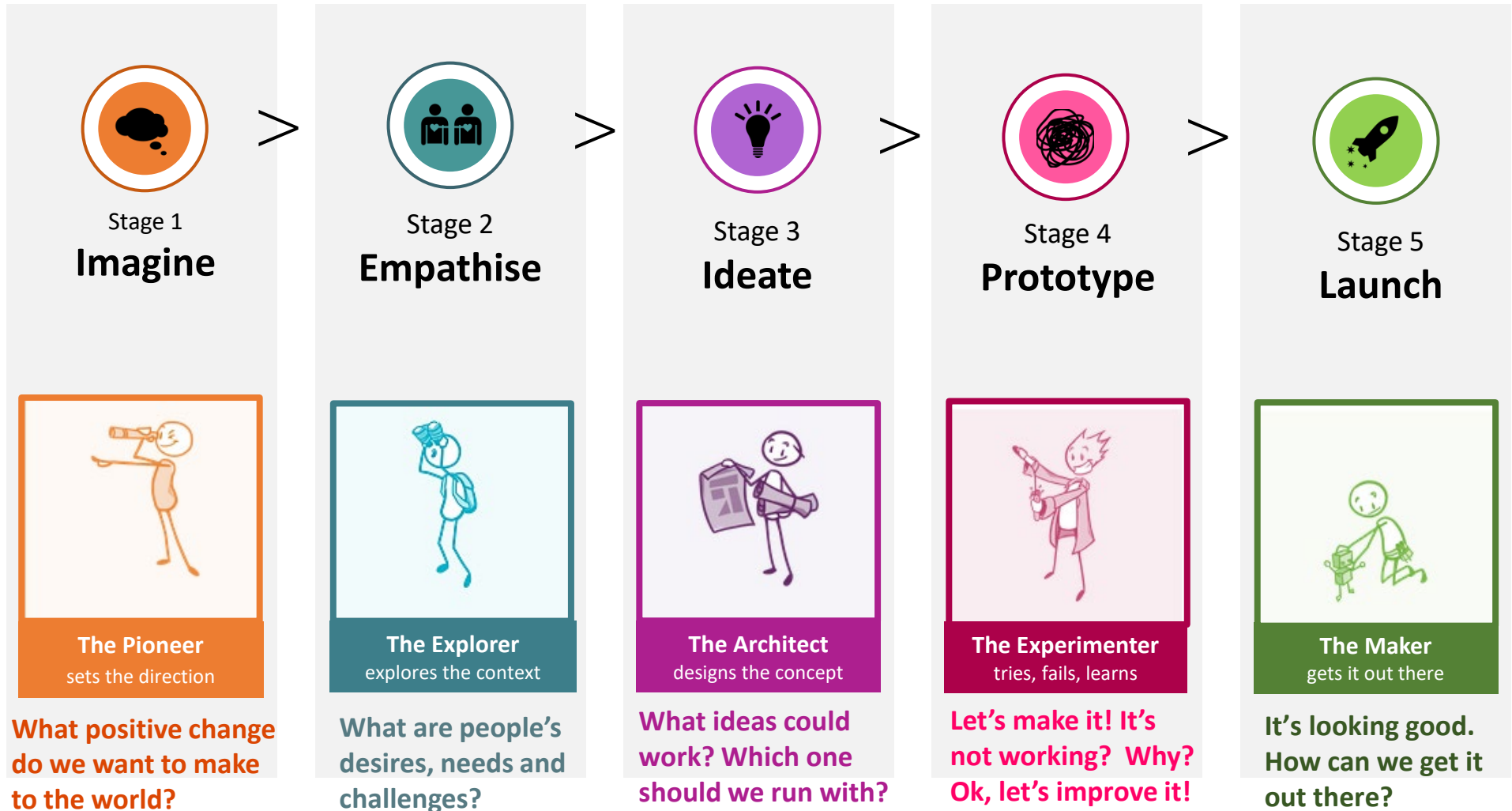
Hi, I'm **Sarah**.

I own a store that supplies schools with sustainably-sourced furniture.

Transport can be expensive. I turn over a lot of furniture, and need quick, affordable freight.

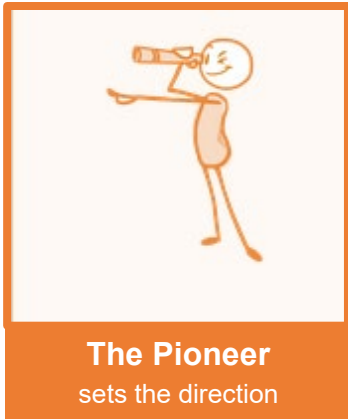
Consider one of the personas (fictitious but realistic people in the map). What are the characteristics of 'good' and 'bad' transport solutions for them? What types of transport options would work best for their needs?

The design thinking characters: what if each step was a person?





Learning activity 3.1: Imagining the future



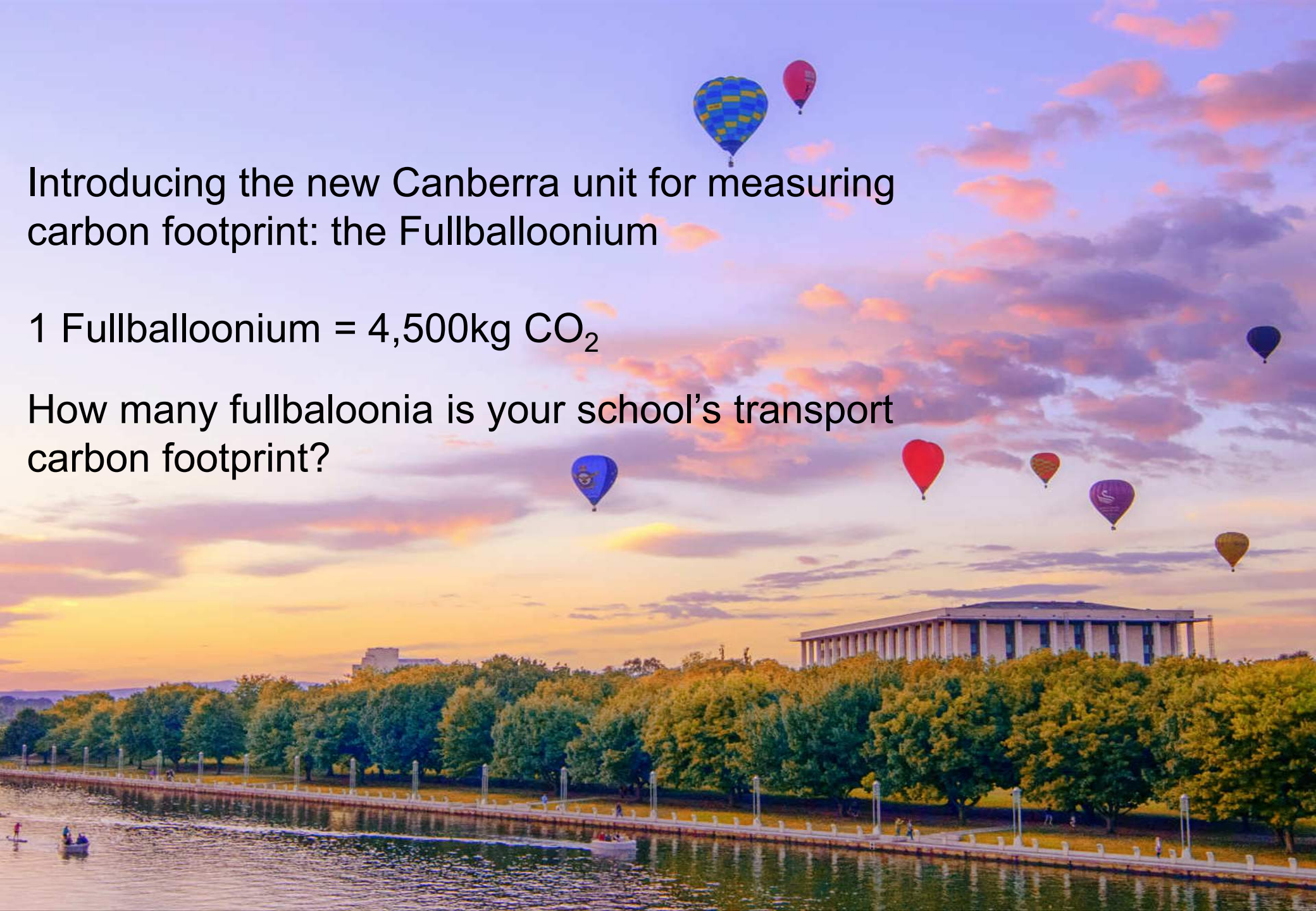
“A SCHOOL COMMUNITY WITH A LOW TRANSPORT CARBON FOOTPRINT”

Without thinking about **how** you get there, what might this look like if you achieved this by this time next year? Imagine you time-travelled out a year and took three pictures that **show** what this new, better future looks like. What pictures might you have taken? Really think and discuss the future you hope your idea (whatever it is) will achieve for your school community.

Draw/find images online to create your “photo from the future” here

Describe your “photo from the future” here, in a sentence or two – what’s different to the way things are now?



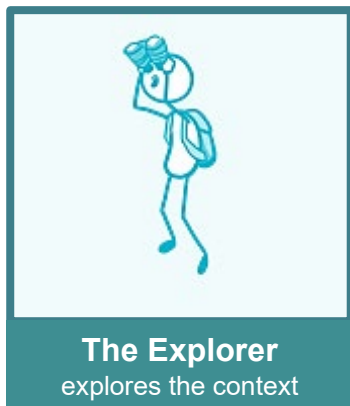
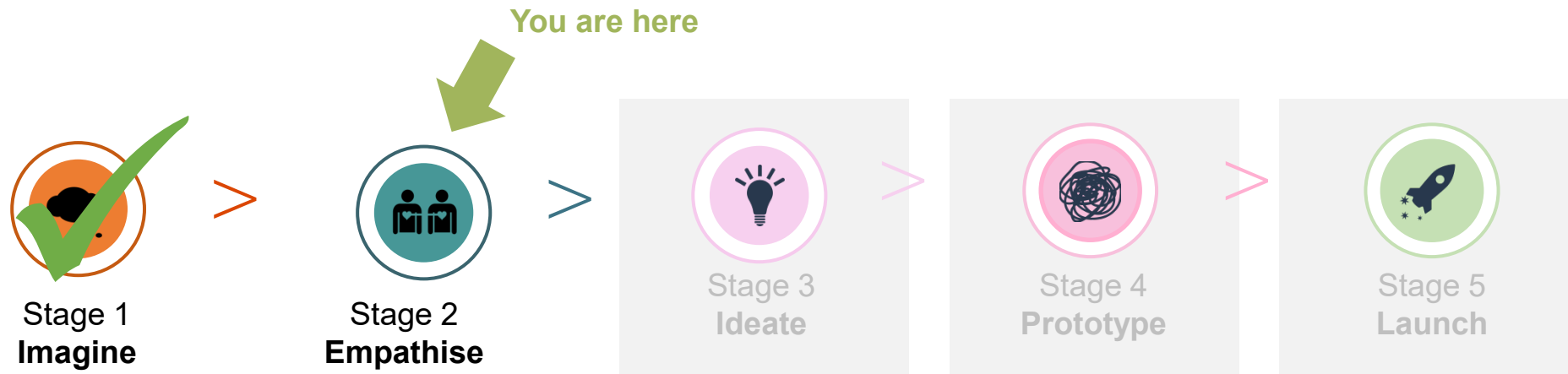


Introducing the new Canberra unit for measuring carbon footprint: the Fullballoonium

1 Fullballoonium = 4,500kg CO₂

How many fullballoonias is your school's transport carbon footprint?

Learning activity 2.1: Exploring empathy as a design tool



“What are people’s desires, needs and challenges?”

Being an explorer means being very curious in learning new things and discovering insights.

You may not know what you will find when you talk to the people you are designing for, but you know that being empathetic and curious will get you there.



Learning activity 2.2: Empathy interviews

1

Intro

Your name, research purpose. What you will seek consent for.

2

Rapport

Initial questions to warm up the conversation.

3

Perspectives

Learn about their surface thinking about the challenge – what do they think, why, what's good/bad, what should be different?

4

Stories

Ask for example stories that breathe life into their perspectives.

5

Deeper

Seek to understand the emotions, motivations and inner thinking that drives perspective and behaviour.

6

Wrap up

Thank them for their time, and tell them what may happen next.

Learning activity 3:1: The empathy quest

1. Prepare

Interview at least 4 people about your challenge – more is better!

Choose people who will have different perspectives/feelings about the challenge.

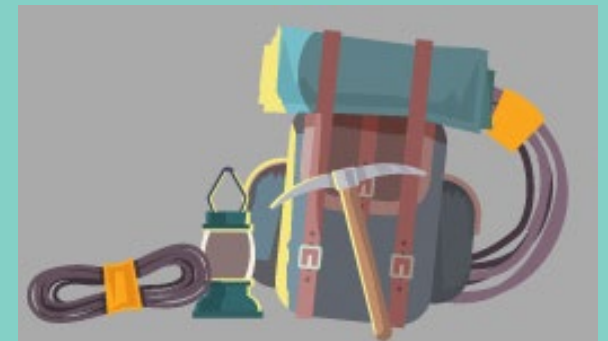
2. Interview

Find the people, book them in if needed, and conduct the interviews.

Remember – notes and quotes.

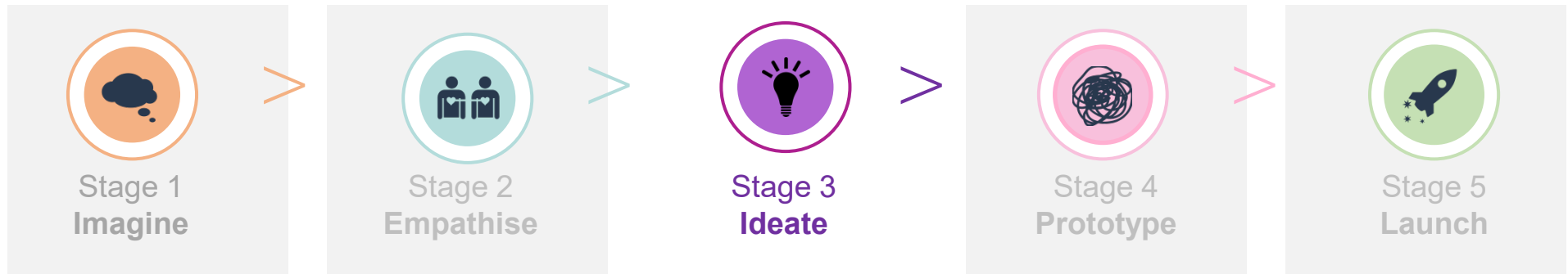
3. Synthesise

Review your notes and work out what it means when you put it all together.





Where are we in the design process?



“What ideas could work? Which one should we run with?”

Architects combine creativity and practicality. They come up with big ideas for things that could be made to achieve some sort of purpose. Then, they decide which ones could actually be made real and how they could work in real life.

Great architects have lots of amazing ideas, but the ones they are most excited about are the ones that can be built.



Learning Activity 1.1: The rules of brainstorming

Don't decide if an idea is 'good' or 'bad' right away.

Wild ideas are big, exciting, challenge our assumptions and may seem impossible to achieve. Many things we take for granted today were once 'wild ideas'.

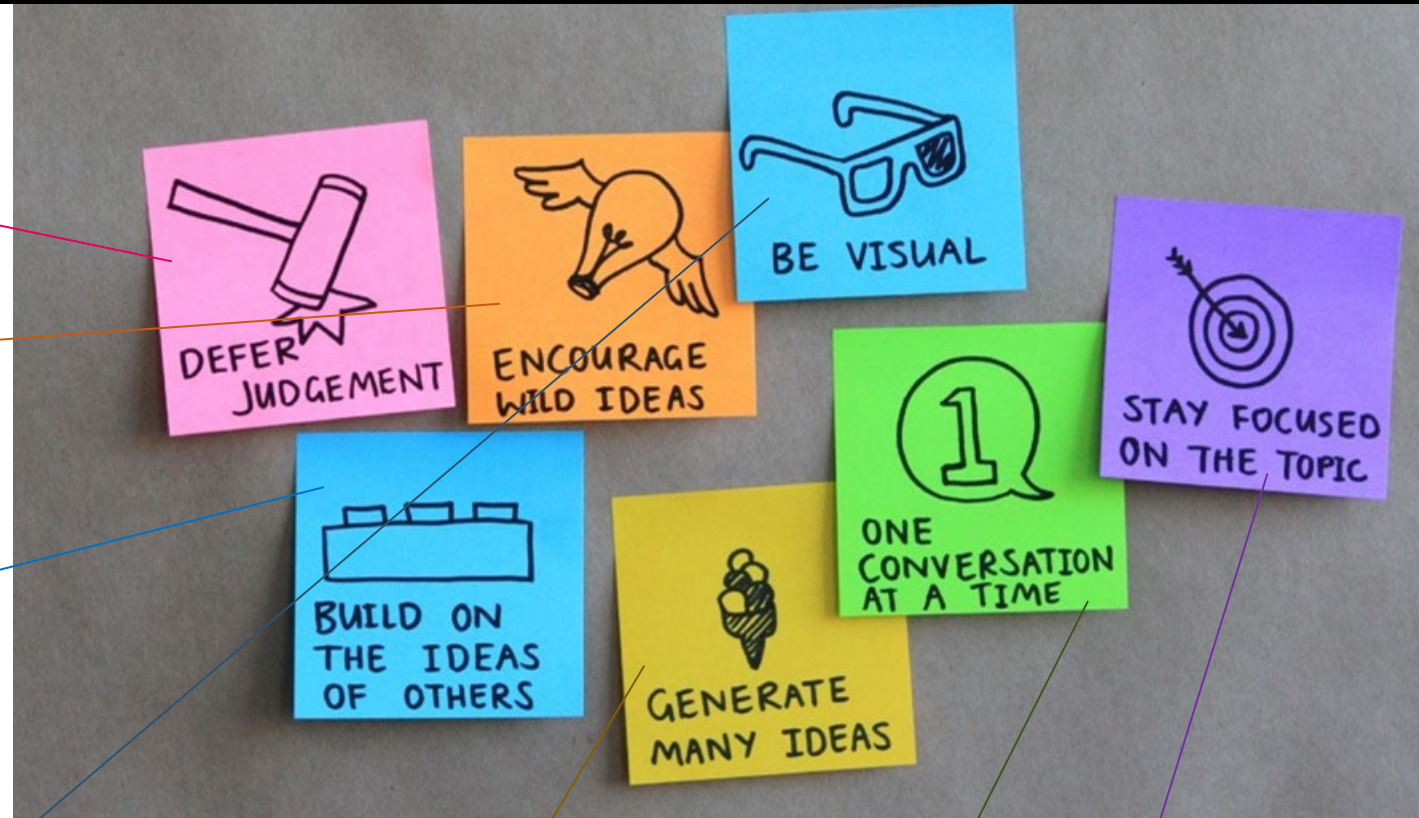
Ideas don't start out perfect. But they might inspire other ideas that make the original a bit better, or take things a bit further. This is a critical part of a brainstorm.

Don't just "describe" an idea. Imagine how it would work, make it visual. Tell a 1-sentence story about the idea in action!

In brainstorming, quantity is more important than quality. Can you get 10 ideas? 20? 50? Don't take too long on any one idea.

Don't talk over each other or have multiple conversations. Listen, contribute and be inspired.

You're ideating for a purpose – lowering your school community's transport emission footprint. Don't lose focus.





What things can you do with a wheel?



STEP 1:

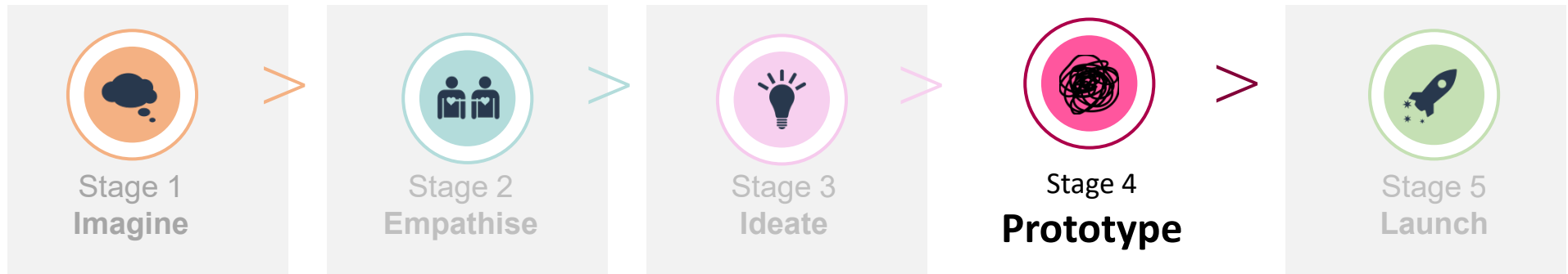
Individually, write down as many ideas as you can. One idea per post-it.

STEP 2:

As a team, group all post-its into similar themes.



Where are we in the design process?



**“Let’s make it! It’s not working? Why?
Ok, let’s improve it!”**

Being an experimenter means making something, testing it and making it better.

You are curious about how you can make your design work, and learn from part of the design that ‘fails’. You are excited by both successes and failures, seeing both as useful parts of the design journey.



Learning activity 3.1: Prototyping mindset

Prototyping is about bringing ideas to life **quickly**.

It lets us take risks with our ideas and concepts, and to test them, learn and **improve in a low-cost, low-risk way**.



**The
Experimenter**

How can we show
our idea in a
physical, visible
and tangible way?

Let's make this
quickly and see
if it works.

Here is a basic
version of our
concept. What
do you think?

Let's try this!

It's working,
mostly. What if
we tweaked this
bit?

Ok that didn't work.
But what if we
change this bit and
do this and...

It's making a
difference!
Hmm...I wonder
if we could...

Learning activity 3.1: Working rough – low-fidelity prototyping

Example of a “low-fidelity” paper prototype of what will one day be a mobile app.
What makes low-fidelity prototyping so useful?



- ✓ Quick to make
- ✓ Allows early testing
- ✓ Quick and cheap to change
- ✓ Encourages failure and iteration



Developing a budget

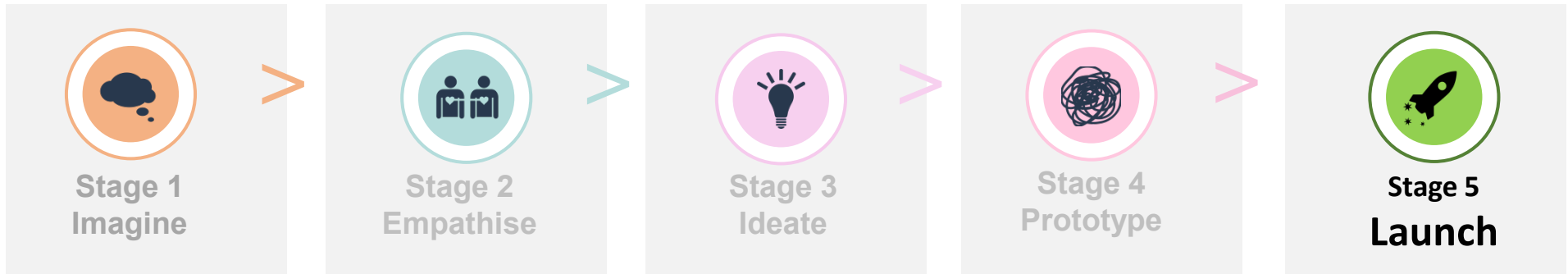
Use the template to make your budget for your concept.

Research different sources for your materials to compare costs and work out how you can get what you need.

Item	Supplier (include contact details)	Cost (\$)	Notes (e.g. when payment is due, when you need to order item)
e.g. 60 apples	e.g. Jimmy's fruit store, Yum Shops. Ph: 6123 4567	\$50	e.g. Payment due when buying them from shop. Phone ahead for easy, pre-prepared pick-up.
	Total cost:	\$50	
	Total budget:	\$1,000	
	Total budget remaining:	\$950	



Where are we in the design process?



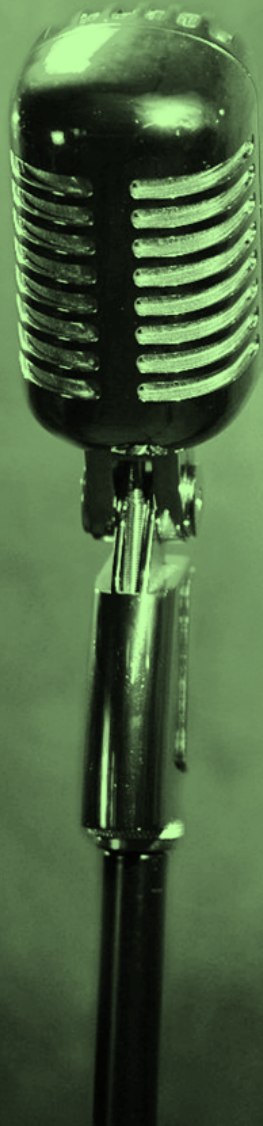
“It’s looking good. How can we get it out there?”

Being a “Maker” means taking the idea and moving it forward, turning an abstract concept into a reality.

As design is finishing up, you’re thinking practically about the plan to make it happen and enjoy getting started on the work right away.



Where are we in the design process?



**What does a great pitch
look like?**

**What does a bad pitch
look like?**