MOUNT GAMBIER LIBRARY STEAM CLUB

SPACE TO DREAM

5 Week Program

Name:



DESIGN THINKING PROCESS

STEP 2

UNDERSTAND AND CARE

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MAKE A PLAN



STEP 1

HAVE LOTS OF IDEAS -CHOOSE THE BEST

DESIGN THINKING PROCESS

STEP 4

MAKE IT!

CAN YOU MAKE IT BETTER?

STEP 5

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Learn about who you are helping

 You are designing a toy or gadget for someone your age who is moving to Mars.

What would it be like to move to Mars? How will it be different from living on Earth,

and how will it be the same?



Use books, internet, films and other sources of information to find out some interesting facts about Mars. Here are a few to get you started:



Skies are pink and sunsets are blue The opposite of skies on Earth



One year = 687 days When would you celebrate your birthday?



The soil is red And contains toxic chemicals



It has the highest mountain in our Solar System Olympus Mons is 2.5 times higher than Mount Everest







It can get very cold Parts of Mars get down as low as minus 125 degrees C



There is no air 95% carbon dioxide and no oxygen in the atmosphere



It's expensive to take things there

It costs anywhere from thousands to millions of dollars just to take 1 kilogram of stuff up there

The best designers figure out the exact problem they are trying to solve for the person they are designing for. To do this, think about the things this person might like and how those things would work on Mars.

What does this person like?

Does this person enjoy a sport? Do they like to cook? Do they like reading? Do they like pets? Will they miss their friends and family when they go to Mars? Anything else you can think of...?

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MAKEA

PLAN

What will it be like for them in space / on Mars?

The 'Understand and Care' step will have given you some great ideas. You might want to create something that:

Does not take up much room.

Has more than one purpose.

Works well with less gravity.

Anything else you can think of ...?

Now ask a question using both ideas to help you create your design.

How might I design a toy or a gadget for someone my age that helps them [with something they like – eg. to cook] that [is good for space / Mars – eg. that does not take up much room]?

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Now you know the problem you will try to solve when designing the toy or gadget.

It's time to come up with lots of ideas – this is also called 'brainstorming'. There are no right or wrong ideas when you are brainstorming. The only rule is that there are no rules! HAVE LOTS OF IDEAS -CHOOSE THE BEST

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Let's have a go...

Write on a piece of paper / draw / doodle / use a whiteboard / record the ideas in whatever way works for you. Stop when you have lots of ideas. Look at them all and decide which is your favourite.

A good way to find your top 3 ideas is to ask:

- What idea will probably work?
- What idea is so crazy it might just work?

What idea are you most excited about inventing?
 You could discuss your ideas with others to help you decide
 which of your ideas you would most like to make.

Remember your favourite idea? Now you are going to make something that shows others what your idea is, what it looks like and how it works. This is also called a 'prototype'.

MAKE IT!

When designing there are so many different ways you can create a prototype.

In our Space to Dream program we are using plasticine and clay to form a prototype.

DRAW YOUR DESIGN

1. Draw your design on the next page.

2. Draw in pencil first then use colour to bring your design to

life.

- 3. You may wish to use labels if that helps you explain your design and how it works.
- 4. Write a name for your design and describe how it works.

EXTRA WORK SPACE BELOW

DRAW YOU DESIGN HERE

- Do other people your age like your design or
- are there ways to make it even better?
 Does this feedback make your design even better?
 - In TinkerCAD you can go back and edit your design.
 - If you drew your design and have changes, you may wish to complete a new drawing on the next page.

NOTES



CAN YOU MAKE IT BETTER?

RE-DESIGN

WELL DONE ON COMPLETING THE

SPACE



This initiative supports Council's commitment to the Mount Gambier Charter for Children.



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