makedo® STEAM DESIGN CHALLENGE

'GAME ON!'

THE PROBLEM

Your school is trying to raise money for a good cause and needs to create entertaining ways to raise money from people in the community. It is organising a festival day with raffles prizes and an arcade. The only problem is we don't have any games for the arcade. Buying games would use up money that would be used to help our cause so you have been asked to design and create some games.
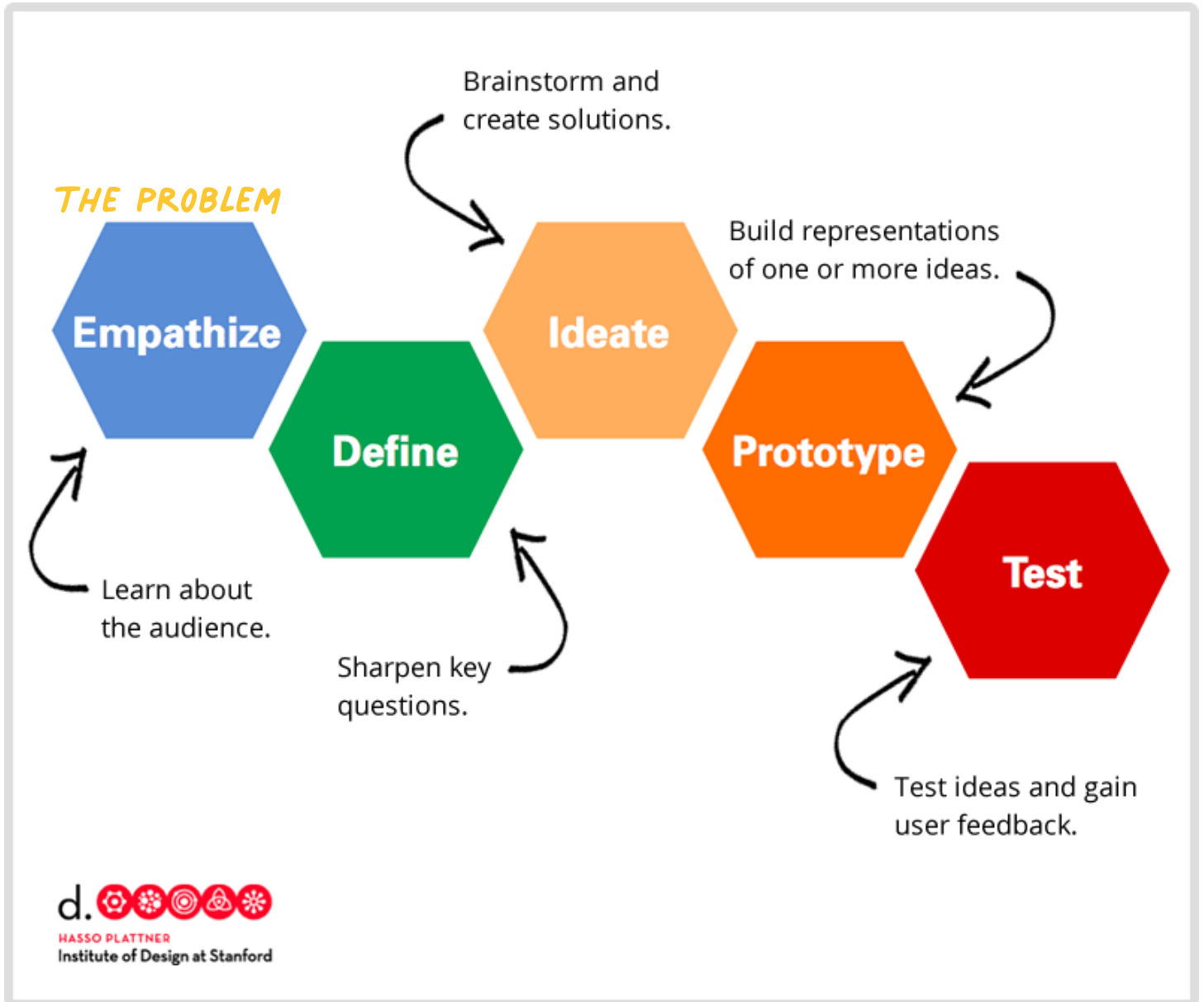
Be inspired by "Caines arcade' to create your own arcade-style games and see how many players you can get! Don't you wish you had an arcade in your school? Why not design one?

YOUR GOAL	Use Makedo resources and recycled materials to create many arcade-style games for a school event.
YOUR ROLE	You are a game designer and arcade owner.
YOUR AUDIENCE	People coming to your school event looking to play entertaining games and win prizes.
THE SCENARIO	A School festival or event to raise money for a good cause.
THE PRODUCT	The product will be a functioning set of arcade games.

HOW TO USE THIS PROJECT SHEET

- As a class, inquire into the design problem. Use this sheet to guide students through the Makedo design thinking process to create your designs.

- Work with students to inquire, generate ideas, create prototypes and test their designs.

- Depending on your group's age and ability use the "Go Further" section to extend the challenge.

THE DESIGN THINKING PROCESS

THE PROBLEM

Brainstorm and create solutions.

Build representations of one or more ideas.

Empathize

Define

Ideate

Prototype

Test

Learn about the audience.

Sharpen key questions.

Test ideas and gain user feedback.

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USING THE DESIGN THINKING PROCESS

When starting out you can work through each section step by step.
As you get more experienced, you can rearrange the sections or jump
back and forth between stages to get a more authentic design experience.
For example you could test an idea before making the final prototype!

EMPATHISE

OBSERVE: What are the different parts of the problem?
Where is the problem happening?
What can we observe that will help us to design our own solution to the problem?
Who is involved; the users, clients and designers. These people are our stakeholders.

ENGAGE: Ask questions and learn everything you can about the design problem.
Why are we solving this problem?

CONNECT: What connections did you make between what you have found out and what you observed?
Talk to other designers about the problem.

DEFINE

FOCUS: What exactly is the problem we will solve?
How could you begin to solve the problem?
What things do we need to be aware of as we move forward?

PATTERNS: What connections and patterns did you see while you investigated the problem?
What areas should you focus on when you start to create ideas?

NEEDS: What do your stakeholders need from a solution?
What are the essential things our solution must have?
How will we know if we have succeeded in solving the problem?

IDEATE

CREATIVITY: How can we represent different parts of the problem or initial ideas for solutions?
Are some ideas best represented with... Mind-maps? Sketches? Models?

FLEXIBILITY: How many different ideas can we come up with to solve the problem?
Do our ideas need to solve all aspects of the problem or just some?
How can we get feedback on our ideas?

DEVELOPMENT: How can we move from our first idea to the final design?
What rationale will we use to choose the best idea(s)?
How can we represent our final idea(s)?

PROTOTYPE

BUILD: Even if you are not sure of all of the details, begin to create your design using Makedo tools

OPTIONS: Make sure to create multiple options or different versions of your ideas.
Remember these are prototypes, not final products.

RESOURCES: Using Makedo tools allows you to work with any kind of recycled cardboard and paper.
What can you find to work with?

USERS: Remember who you are designing for.
What are the needs and preferences of the users we identified earlier?

TEST

SHOW, DON'T TELL: Will we learn more about our prototypes by describing them to others or by showing them off?
What different perspectives will users have of our prototypes?
What can you learn from observing and listening to users while they experience your prototypes?

EXPERIENCES: Does your prototype create an experience for the users that explains how the product would work?
Is it good if our prototype breaks or fails during testing?

COMPARE: Did you create multiple prototypes which can give users multiple options to compare and contrast?
Can we compare to other designers' prototypes to assess our own success?
Can we compare our prototype to existing real products?

KEYWORDS

Here are some keywords and terms you can explore to help you understand the design thinking process.

Design	User	Design problem
Empathise	User experience	Observation
Define	Design solution	Programming
Ideate	Sketching	Perspective
Prototype	Modeling	Mechanism
Testing	Resources	Existing products

GO FURTHER!

LEVEL 1: Can you design an arcade game with many moving parts?

LEVEL 2: Could you use electronics or mechanisms to keep score in your arcade game?

LEVEL 3: Can your design give out tickets or prizes when someone wins without anyone attending to it?

SHARE YOUR CREATIONS!

Share your Makedo Design Challenge adventures with our Makedo community!

Upload here to be considered for our HUB

Post on Instagram and tag us @makedo