Big Picture

EXPLORING DESIGN IN YOUR COMMUNITY

'Big Picture' challenges students to be active agents for change and to think creatively and optimistically about solutions to future global issues that deliver social, economic and environmental benefits.

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BENCHMARKS	National Curriculum
CURRICULUM AREAS	English, Science
CROSS CURRICULUM PRIORITIES	Asia and Australia's engagement with Asia, Sustainability
TEACHING LEVEL	11-12

EXPECTED DURATION

60 MIN x 4-6

The original workshop was held over one school day duration. Depending on the intensity of the focus, the unit of work could be developed over approximately 4-6 x 60 minute lessons/workshops, or the inquire exercises as smaller workshops treated as discrete learning experiences. Teachers and students are also encouraged to explore further inquiry (background research) to enhance the ideation exercises.

EXERCISES

1. The Big Issues
2. The Big Idea
3. The Big Picture

RESOURCES FOR COMPLETION

- Computer/Internet access
- Access to a Laptop/computer for each team (if possible)
- Pencils and black marker pens (thin 0.2/0.4 and medium 0.6)
- Post-it notes
- A1 sheet of corrugated cardboard or foamcore as presentation board
- Various presentation materials such as pantone markers or felt tip markers, crayons
- A3 cartridge paper for group development work
- Scissors, steel rule 30mmm & Stanley knife with retractable blade (No snap-off blades)
- Model-making materials - Foam core board & stiff white card, coloured card and recycled materials
- Cutting Board/mat
- Fixing materials for model making - Glue (hot glue gun), double sided tape, masking tape and cello tape
- Used magazines, newspapers for collage

RESOURCES FOR DOCUMENTATION

- Digital camera/scanner/video camera to document design process and presentations

DESIGN AND CAPABILITIES

INQUIRE

IMPLEMENT   IDEATE

Capabilities for creating successful learners, confident and creative individuals, and active and informed citizens.
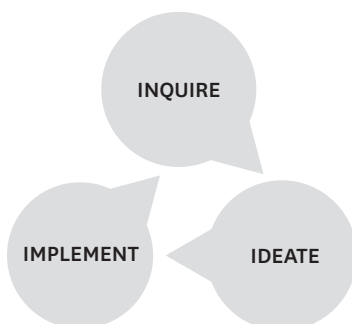
	1	2	3	4	5	6	7	8	9	10
Intercultural Understanding									9	
Ethical Behaviour										10
Personal & Social Capability									9	
Critical & Creative Thinking								8		
ICT Capability								8		
Numeracy	1									
Literacy					5					

Visit Design Minds for more info on design phases.

Visit the Australian Curriculum website for more info on general capabilities.

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The Big Issues

🕐 60 minutes x 1-2   💬 Inquire

METHOD

Whole class (approx. 25) working in six groups/teams of 4 (plus 1 designer + parent/teacher + illustrator per team - optional)

ACTIVITY

The majority of the world's designers focus all their efforts on developing products and services for the richest 10% of the world's customers. Let's think about design for the other 90%, which has the potential to have much more impact. By placing the end user at the heart of the problem, we can create new pathways forward that deliver social, economic and environmental benefits. In this activity we will think about some problematic scenarios that require new solutions.

Teacher to introduce discussion to whole class about design artifacts, products, systems or services which have made a profound impact on social, cultural or environmental outcomes. Examples could include:

·   One Laptop per Child - Yves Béhar & Nicholas Negroponte www.laptop.org (education)
·   The Barefoot College – Bunker Roy www.barefootcollege.org (education)
·   QDrum www.qdrum.co.za (water)
·   LifeStraw – Torben Vestergaard Frandsen www.lifestraw.org.uk; www.vestergaard-frandsen.com (water)
·   Solar Dish Kitchen www.basicinitiative.org/.../Solar_Kitchen.htm (food)
·   Safe R House Tsunami Resistant Housing, Sri Lanka – Carlo Ratti www.prajanapaya.org (shelter)
·   Wave Generated Energy Systems – Dr Tim Finnigan www.biopowersystems.com (energy)
·   Food for the Future, Guangming Smartcity Project China - CJ Lim www.cjlim-studio8.com (food)
·   Myanmar Bamboo Treadle Pump – Proximity Designs www.proximitydesigns.org (water, health)
·   Kiran Solar Lantern – D.lightdesign Limited www.delightdesign.com (energy)
·   Shidhulai Floating Schools, Bangladesh – Mohammed Rezwan www.learningforlifeuk.org
·   Carbon Conservation & Flight Emissions Calculator www.carbonplanet.com (transport/energy/climate)
·   Paper Log House – Shigeru Ban www.designboom.com/history/ban_paper.html (shelter)
·   Aravind Eyecare Hospitals – Dr Govinda Venkataswamy www.aravind.org (health, employment)

Students form teams (ideally to include a good team leader, at least one team member with drawing or making skills, and a team member with writing skills). Teacher to allocate one 'Big Picture' issue to each team or choose one 'Big Picture' issue for the all of the teams to work on from the following examples:

·   Food (nutrition, food security, production, availability, hunger)
·   Water (availability, security, purity, pollution, cost, conservation, capture)
·   Waste (nuclear, rubbish dumps, collection, batteries, recycling)
·   Shelter (homelessness, cost of housing, safety, accessibility, alternative types)
·   Health (pandemics, wellbeing, disease, obesity, fitness, skin cancer)
·   Education (access to, digital, literacy, participation, e-learning)
·   Energy (renewable, distribution, conservation, technology)
·   Employment (access to jobs, skills development, safety, new practices)
·   Transport (safety, sustainability, accessibility, mobility)
·   Growth (Population, density, livability, democracy, contraception)
·   Ageing (universal access, child/parent care, services, retirement strategies)
·   Climate (climate change, carbon neutral)
·   Natural Disaster (disaster relief, emergency shelter, social support)

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The Big Issue
CONT.

METHOD	Whole class (approx. 25) working in six groups/teams of 4 (plus 1 designer + parent/teacher + illustrator per team - optional)

ACTIVITY

Task (Research)

Teams research topic areas on laptop or at library – each team member to find an interesting fact about the topic area allocated and then discuss the findings:

- Eg. Food - the average American child sees more than 10,000 food advertisements each year on television
- Some 800 million city dwellers around the world grow food, while 200 million earn their living farming in the city. Cities such as Dakar, Sofia and Singapore produce a significant percentage of their food through urban farms. (Steffen, A. 2006. Worldchanging. Abrams: New York, p.61)
- 50% of the food grown around the world is wasted in the production, transportation and consumption cycle; up to 50% of the water used in the production of food is also wasted.

Task (Brainstorm)

Each individual member of the team to go through a personal mapping, brainstorming or thinking process to identify a problem area they find interesting within the allocated topic area. Think about your daily life, the place you live and the society that surrounds you. What situations or behavior patterns can you see around you that you feel are problematic and have negative social or environmental outcomes? Think about what people do and how they do it, the way others live, the forces at play in the world around us all that will influence and shape our lives in the future.

Can you uncover something that if changed could improve the lives of others, their quality of life or the environment? Choose something in your world that you have the power to change; a big or small issue that you feel passionate about. Each individual to present a 30 second overview of their chosen problem to the group answering the following questions:

- What is the problem/issue that you have chosen?
- How does it affect people/the environment?
- Why do you feel it is important to change?
- What would be the ideal result of your design?

Task (Design Brief)

As a team, examine each of the problems presented by group members. Everyone's issues and ideas are different, but to work effectively in a group, you will need to democratically agree on one issue that the group find most interesting, or perhaps an issue that connects each individual's thinking. Discuss within the group and identify one problem to take forward. Create a visual map or systems diagram that describes the variable and relationships that are part of your problem area.

Develop a short written statement or design brief for your project (150 words) that answers the 'Five Ws' (borrowed from news writing):

- **Who** is the client and target audience?
- **What** design solution will be delivered? (system, service, product, thing, space)
- **When** will the design solution be needed and for how long? (project timescales)
- **Where** will the design be used? (media, location, country)
- **Why** does the client think a design solution is required?
- **How** will the solution be implemented? (budget, distribution, campaign)

(Ambrose, G. & Harris, P. (2010). Design Th!nking. Lausanne: AVA publishing SA. p.16)

Teams to present these ideas back to the overall group. Other teams to comment on any thoughts they might have to contribute to each project.

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The Big Issue
CONT.

Have you considered:

To commence the workshop invite a guest designer working in a relevant and interesting related field to talk to the students about what it means to be a designer, set the scene and excite the students about the possibilities. They might also talk about the design thinking process and the many ways we can use design thinking to create benefit and change across broad social and geographic contexts.

REFLECTION

Each team of students are asked to document reflections, notes and sketches on A3 cartridge to be assembled as a student journal later.

Prompts for reflection:

· If you are finding it hard to know where to start or make a decision, one way is to make priorities based on the triple bottom line - social, environmental and economic impacts of a situation - whether it is a product or system or combination of both.
· Start thinking about your personal belongings that relate to the topic area and working outwards identify the product or system that you feel most needs to be redesigned.
· Why should things be changed? During this process consider the many things or situations in your world that are in need of improvement.
· Move progressively outwards, in circles of scale – from yourself to your home, to your school, to your town, to your city, to your country, to your region of the world, to the world as a whole.

DOCUMENTATION

Scan students' reflections and brainstorming and include in an online wiki for the project

Team to record their step-by-step design process with video or photography to include in their final journal or electronic file on CD

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The Big Idea

🕐 60 minutes x 1-2   Inquire/ Ideate

METHOD

Whole class (approx. 25) working in six groups/teams of 4 (plus 1 designer + parent/teacher + illustrator per team - optional)

ACTIVITY

In this activity your choice of problem or issue will allow you to start the process of thinking through a response to your personal, local or international 'challenge'. You can either choose to redesign an existing object, system, service or a combination of all of these.

· In your design teams brainstorm 4 rapid 'prototype' ideas that could solve your problem. Do this using a quick 'post-it storm' with each member of the team brainstorming as many ideas as possible in five minutes and share your ideas with the team.

· With team consensus, choose the 'prototype' that the group feels has the most potential to be effective. Review this against the objectives in the 'Five W's' that you stated in your design brief.

· Develop this idea more fully so that it can be presented as a 'working design'. This can be done through sketching, diagramming, mind mapping, model making or whatever experimentation you need to think the idea through thoroughly.

· Each design team to get together with another design team and discuss your design brief and prototype' idea. Write down feedback from the other group on your idea or new avenues to explore.

Questions to each group could be in relation to:

· How this solution will affect the end user? What social consequences will this solution have?
· How this solution will affect the environment? Is it sustainable and does it involve sustainable practices?
· Does this solution consider cultural implications/differences/rituals?
· Is this solution economically viable and what is the business model for implementation?
· What will be the impact of this solution to improve the current situation?

Regroup as a design team and discuss how some of the feedback could be incorporated to improve your design solution. Refine your idea so that you are ready to implement your design solution in the next exercise for presentation to the larger group.

💡 **Have you considered?**

If you do not have a professional designer as part of each design team, consider inviting a guest designer/s to critique the design idea and give feedback on ideas for improvement or direction, prior to finalising the designs.

REFLECTION

Prompts for reflection:

· Always think of the end-user – the people at the heart of any situation. Does this solution close gap areas or impact on areas that are problematic?
· Think of the environment – how will you ensure that your design minimises its impact upon ecological systems? Consider materials processes, habits of consumption and use.
· Think of a business model – would your idea work in the real world? Will it be a business, a government project or a community initiative? What will ensure that it adds value in an economic sense? Does it need to?

DOCUMENTATION

· Students are asked to document reflections, notes and sketches in a team journal.
· Scan students' reflections and brainstorming and include in an online wiki for the project
· Team to record their step-by-step design process with video or photography to include in their final journal or electronic file on CD

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The Big Picture

🕐 60 minutes x 1-2   Implement

METHOD

Whole class (approx. 25) working in six groups/teams of 4 (plus 1 designer + parent/teacher + illustrator per team - optional)

ACTIVITY

In this activity you will utilise teamwork and collaboration to prepare a visual and verbal design presentation of your idea. You will need to discuss the responsibilities of each team member, working on their strengths, to ensure that you can deliver a quality presentation in the time frame allocated. It is a good idea to at least allocate a team leader and one team member responsible for working out the script for your verbal presentation.

In your design teams make a visual representation of the 'working design'. This could be a drawing or illustration, a storyboard, mapping diagram or model or similar. You can use a variety of these methods together if it helps to communicate your idea.

Prepare a verbal presentation of no more than five minutes that explains the project – from the development of the design brief, to the prototype phase, to the final 'Working design' solution. Talk about your ideas and not just about what you did. Refer back to your brief and talk about how your solution fulfils the aspirations of your design brief.

Each team to present their design solutions to a judging panel or to the larger group. Each presentation to discuss the following:

· Target issue (what is the problem?)
· Target user (who does it affect?)
· Key considerations (what relationships or forces are driving the problem?)
· Design description (why you designed it like this and what are the features of the design?)
· Next steps (how would you make this a reality?)

💡 **Have you considered?**

Consider inviting guest designers or members of your local business or government community and assemble a judging panel to critique the group presentations and give feedback on ideas for future improvement or direction.

REFLECTION

· Students are asked to document reflections, notes and sketches in a team journal.
· Photograph and video (in an appropriate video studio environment) both your final verbal and visual presentation
· Display finished presentations (with videos of the verbal presentation) in a physical public exhibition or online exhibition and ask visitors to choose their favourite design and why
· Students to discuss public comments in class and reflect on how each design could be improved or developed in the future.

Prompts for reflection:

· What are the implications of your design on the triple bottom line - the potential social, environmental and economic impacts?
· What is the role of design thinking in shaping a positive future for the Asia Pacific region?
· What are some of the tools you have learned doing this project which have helped you think about 'Big Picture' issues? Does it need to?

DOCUMENTATION

· Include photographs and video on an online wiki for the project

· Team to record their step-by-step design process with video or photography to include in their final journal or electronic file on CD

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