Regenerating Australia - Regenerate A Space Challenge

Name _____ Class _____

Teaching Sequence

Work through this resource material in the following sequence:

10 minutes	Part A: Activate prior knowledge about sustainability and regeneration
10 minutes	Part B: Presentation of different ways to be sustainable around the home
30 minutes	Part C: Research companies that provide regenerative products
60 minutes	Part D: Retrofit task
10 minutes	Part E: Presentation (optional)

Part A: Activate prior knowledge about sustainability and regeneration

Step 1.

Commence the lesson by sharing **this excerpt** from Regenerating Australia with the class and facilitate a brief discussion about the meaning of regeneration within the design context. Invite students to provide some examples and concepts they saw in the Regenerating Australia film.

Other videos:

- **What is Regeneration** (use the password: EDURA)
- Damon's **video** presentation on planetary boundaries and why we need to regenerate before we can achieve sustainability.

Step 2.

Present and answer the following questions as a class:

- What does regeneration mean and how is it different from sustainability?
- What is an example of a regenerative solution or idea?
- What outcomes can we expect from the regenerative theory/concept?

Step 3.

Ensure students understand the difference between regeneration and sustainability and can articulate that sustainability seeks to reduce harm whereas regeneration takes things a big step further. A regenerative approach to design and development seeks to reverse environmental degradation and social fracturing to create a positive impact on people and the planet.

Step 4.

Organise students into groups of 3 or 4 and ask them to write down any sustainable products (in any industry or field) they have seen. Invite each group to share one sustainable product and tell the class why it is sustainable (and perhaps regenerative) and how the concept of regeneration applies to modern society.

Part B: Presentation of different ways to be sustainable around the home

Step 1.

Present or distribute the **Regenerative Design fact sheet** and discuss different house areas that can be sustainable and regenerated. You might want to go through a few areas to clarify. Ensure you help students understand how regeneration applies to each area of sustainability where appropriate, i.e. placemaking, planting etc.

Ensure students understand that sometimes we need to employ experts in the trade and conduct further research to make sure we are doing things the right way.

Note: There are some additional links and suggestions made on how to further explore concepts. Some of the links may change over time. Therefore, we have listed the web pages below just in case:

- **Rewiring Australia**
- **Passive healing and cooling**
- **Insulation**
- **Bamboo**
- **Hemp**

Part C: Research companies that provide sustainable and regenerative products

Step 1.

Allocate one area of research for each group and advise students to research one local business that provides sustainable products or services. Try to direct them to companies that can relate to retrofitting a home or space. You can use the headings on the **Regenerative Design fact sheet** as areas to research.

Ensure you prompt students with some information to encourage them to research new and innovative regenerative materials and even introduce the idea of materials that sequester carbon. Examples of this include fast-growing wood, hemp, bark, cork, straw, or bamboo, materials made from biochar, and mineralised CO2 within zero-carbon cement, gypsum, concrete that is removed or diverted from atmospheric emission, and that diverts otherwise harmful materials from landfills. You can find more information on this from the Land Art Generator website.

Here are some areas to research and links that are good examples of businesses that provide sustainable products:

- **Housebuilder**
- **Cabinetry**
- **Passive heating and cooling**
- **Fabrics**
- **Double glazed windows**
- **Sustainable fabrics**
- **Flooring**

Step 2.

Ensure students have summarised information accordingly and that it is accessible and easy to read. They can do this electronically or create a hard copy. Some guiding questions or prompts for students to consider while researching may include:

- What are the company's values?
- How are the company values aligned with sustainability and/or regeneration?
- What materials and products do they use?
- Where are the materials and products made?
- What do you find most interesting about the product?
- Why do you want to use this product?

Ask your students to provide just one image and an explanation as to why the product is sustainable from the following perspectives:

Social/Ethical: How does the product or service contribute to the livelihoods of people?
Environmental: How does the product or service consider things like waste, recycling or carbon footprint?
Economic: Is there information on how the company treats its workers? Are they paid fairly? Who benefits economically from this product or service?

Step 3.

Students are now in the **Critical Thinking** stage and are required to create a guide for a contestant on the Block that does not know anything about regenerating their home with ethical and sustainable products and resources. This guide is something the contestants can use and refer to while making decisions for their renovation.

Ensure you remind students that the contestants are not likely to know what regeneration means or why it is important. Encourage students to provide useful information that is easy to understand.

Step 4.

Based on their research above, ask each group to list their item and a criteria question in the **regeneration retrofit checklist** provided. They can write this on the board or do it electronically in a shared document. Ask them to consider important aspects of their product when writing the criteria question. For example, are the curtains made from sustainable fabric? Are the organic fibres farmed sustainably?

Step 5.

Ask each group to copy the **regeneration retrofit checklist** and to add/remove items as they see fit. Advise them that they will use this when selecting materials and making decisions about their own retrofit in the next task.

Part D: Retrofit task

Step 1.

Advise your groups to brainstorm and choose a space to retrofit.

You may like to change the approach and choose spaces around the school - community hall, library, sports centre, etc. OR another replace that holds great significance such as a reading nook, bedroom, lounge room, etc. Ensure the space has meaning to the student, group and class. When a space has personal meaning to the student, they will be able to connect with the space in a deeper way and feel more inclined to make informed and calculated decisions that benefit themselves and the community.

Step 2. Creative Thinking (Empathise and Define)

Ask students to visit and take photos of the space (if you have cameras or smartphones) or sketch the space/area. Ask them to note down things like:

- Who will use the space?
- What happens in this room/area?
- What does the space look out on (views)?
- What is the position of the sun in relation to space?
- What does it look/feel like at different times during the day?
- Does this space have any special/important features?

Steps 3-5 can be delegated to group members. For example, two students could measure the space, while one draws up a floor plan, another collects materials, and one outlines visualisations etc.

Step 3. Creative Thinking (Ideate)

In their groups, ask students to brainstorm ideas about how to retrofit the space on an A4 piece of paper. On completion of the brainstorming, advise them to visualise - i.e. draw their ideas as small sketches based on the brainstorming. They can draw these on a separate sheet of paper.

Option: Images (both drawn and sourced) can be used as part of the visualisation process. You can invite students to print them off as small images and draw their ideas on the image using a pencil or fine liner.

Step 4.

Ask students to collect online images or draw materials, products, and services they selected as part of the retrofit. They could also collect actual material samples if they are available.

Step 5. Critical Thinking (Prototype)

Get students to measure and develop a floor plan to show products, materials, services, window openings etc. A scale of 1:50 will be enough to represent furniture.

Step 6. Critical Thinking (Test and Implement)

Ask students to use the **regeneration retrofit checklist** they created in Part C, Step 3, to evaluate materials and services they have used.

Step 7. Implement

Create a mood board. Advise students what a mood board is, i.e. something that communicates the look and feel of the design process and outcome. Ask students to place the floor plan, visualisations and selected materials and technologies into a mood board to indicate the look and feel of the space. Ensure students annotate the board to show where regeneration and sustainability have been considered and why.

For example, if a student includes an image of sustainably sourced and FSC certified timber, then let them know they are expected to address the following:

- Where will the product be installed?
- Why it is a good fit for the space?
- Why did they choose that specific product?
- How does it align with the purpose of regeneration?

Part E: Presentation (optional)

Step 1.

This is an excellent opportunity for students to share and discuss their ideas with the class. If you decide to facilitate a presentation, ensure you set aside at least 30 minutes and allow students to pose questions, alter their initial ideas, and add new information.

Reflection

- How has your perception and connectedness to the place you retrofitted influenced your decisions?
- How has the lesson encouraged you to consider the environment when making design decisions?
- What are some of the changes you and your community can make that contribute to regeneration?

Differentiated Learning

Extension

Advise students to draw interior elevations of the space at a scale of 1:50 and apply textures. Another option is to get students to draw a one-point perspective of the space with materials applied. See link to help students to draw one point perspective of a room.

How to Draw a Room in 1-Point Perspective for Beginners

Provisions for Learning Support

This unit of work is designed to help visual, social and experiential learners. It is collaborative and should have students out of their seats from time to time. For students who struggle with research, give them one of the websites above and guide them to list quick facts. Students should be working collaboratively and using images and text throughout this unit, which will help visual and social learners to retain information.

Teacher Reflection

Take this opportunity to reflect on your own teaching:

- What did you learn about your teaching practice today?
- What worked well?
- What didn't work so well?
- What would you share?
- Where to next?
- How are you going to get there?