East Timor Engineers Without Borders Challenge Worksheet.
During the session your group will fill in the exercises on this worksheet

*Demonstration on Search – finding books & journal articles

1. Analysing the research topic

Consult one of the following online encyclopaedias available through Search for background information

To access these resources: Search the title in quotes eg “comprehensive renewable energy”, and then follow the links on the View it tab

- Comprehensive Renewable Energy
- Encyclopedia of consumption and waste the social science of garbage
- Encyclopedia of Ecology
- Encyclopedia of Energy (This item is temporarily not accessible from search. You can search it directly through the database ScienceDirect)
- Encyclopedia of environmental science and engineering
- Encyclopedia of Environmental Health
- Encyclopedia of Information Communication Technology
- Water encyclopedia

✏️ Your topic. Write down your search topic in the form of a question and underline the keywords or phrases

Example: Design a sustainable house for a Vietnamese family. Design may encompass using traditional methods and materials and improving them for passive cooling in a hot, flood prone climate, or a design made to use readily found recycled materials. Design roof for rain water collection, rainwater design. What designs are out there? How suitable are they?

✏️ Your topic. Now select three main concepts

<table>
<thead>
<tr>
<th>Keyword/Phrase 1:</th>
<th>Keyword/Phrase 2:</th>
<th>Keyword/Phrase 3:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concept 1</td>
<td>Concept 2</td>
<td>Concept 3</td>
</tr>
</tbody>
</table>
Thinking of alternative terms for your keywords

Translate your group’s three chosen concepts into alternative keywords (synonyms, antonyms, and alternative spellings)

**Synonyms:** words or phrases that have a similar meaning eg mobile phone, cellular phone or even antonyms eg focused vs preoccupied

**Plurals** more than one eg mobile phones (consider truncation)

**Variant spellings** eg US English vs Australian English – behaviour, behavior (consider wild cards eg behav?or)

**Acronyms, Abbreviations** – eg ATRI or Australian Transport Index

**Broader terms:** eg Telephone equipment is broader than Mobile phone

**Narrower terms:** Type of mobile phone

**Hint use the thesaurus of relevant database eg Compendex, ATRI (transport)**

Alternative terms example 2

**Concept 1.**
- "adobe building"
- "traditional building"
- "vernacular architecture"
- "mud brick"

**Concept 2.**
- vietnam
- vietnamese
- "developing nation"
- "developing country"

**Your topic:** now write up to three synonyms for each concept

**Concept 1.**

**Concept 2.**

**Concept 3.**
Using Connectors: AND, OR, NOT

Connectors are used to combine search terms. There are 3 connectors: AND, OR, NOT. These are described below:

**AND**
placed between words means both words must appear in each record. This will narrow your search. For example, “washing machine” AND design will retrieve all records which contain both terms.

**OR**
placed between words means that either, or all, word/s may appear in each record. This will broaden your search. For example, greywater OR graywater will retrieve all records with either greywater or graywater as well as both terms.

**NOT**
between words means that the second word must not appear in any record. This will narrow your search. For example, “wastewater treatment” NOT chemical will retrieve all records with “wastewater treatment”, but no records with chemical and no records in which both “wastewater treatment” and chemical appear. Take care when you use the NOT connector – you may lose useful information.

TIP:
Internet Search engines such as Google or Yahoo that search databases of internet pages use some special connectors of their own. They may use + and - symbols as connectors. Check each Internet search engine’s Advanced Search option of Help for more Information.

Alternative terms with Boolean demonstrated on ScienceDirect

<table>
<thead>
<tr>
<th>Concept 1.</th>
</tr>
</thead>
<tbody>
<tr>
<td>housing OR dwelling OR abode OR building</td>
</tr>
</tbody>
</table>

**AND**

<table>
<thead>
<tr>
<th>Concept 2.</th>
</tr>
</thead>
<tbody>
<tr>
<td>bamboo OR Bambusa</td>
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</table>

**AND**

<table>
<thead>
<tr>
<th>Concept 3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>“East Timor” OR “Timor Leste” OR “South East Asia” developing countries/nations</td>
</tr>
</tbody>
</table>
ScienceDirect Search: Searching full text of article, searching on **two concepts**: Housing and Bamboo

ScienceDirect Search: Results of two concepts

1. Results of 2 concepts searched

2. Useful article?

3. Let’s add our 3rd concept: Type: “east timor” OR “timor leste”
ScienceDirect Search: Results of three concepts (Searching across full-text of article)

1. Results of 2 concepts searched

2. Useful article?

Hint: If the Search terms for last concept “East Timor” OR “Timor Leste” narrow the search down too much try broadening search to “developing countries” OR “developing nations”

Boolean Search strategy II – demonstration on ScienceDirect: searching only the Abstract, Title and Keyword fields.
Here we are reusing the first two search sets (housing OR dwelling OR abode OR building) AND (bamboo OR bambusa). We are likely to get more relevant results when we are searching these key fields as opposed to any word in that is matched in the full text of the journal article, but we will get less results.
Results of restricting search terms to key fields: Abstract, Title, Keywords:

Excerpt of full text of first article showing matching search terms to key fields: Abstract, Title, Keywords: