

## Science (S1-3) - Lesson Design & Evaluation Tool (Trial version)

| School :             | ABC college  | <div style="text-align: center;"> <b>Modes of lesson engagement</b> </div> <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <caption>Modes of lesson engagement (Time in minutes)</caption> <thead> <tr> <th>Mode</th> <th>Time (min)</th> </tr> </thead> <tbody> <tr> <td>Passive</td> <td>10</td> </tr> <tr> <td>Active</td> <td>10</td> </tr> <tr> <td>Constructive</td> <td>0</td> </tr> <tr> <td>Interactive</td> <td>0</td> </tr> </tbody> </table> | Mode | Time (min) | Passive | 10 | Active | 10 | Constructive | 0 | Interactive | 0 |
|----------------------|--|---|------|------------|---------|----|--------|----|--------------|---|-------------|---|
| Mode                 | Time (min)   |   |      |            |         |    |        |    |              |   |             |   |
| Passive              | 10   |   |      |            |         |    |        |    |              |   |             |   |
| Active               | 10   |   |      |            |         |    |        |    |              |   |             |   |
| Constructive         | 0  |   |      |            |         |    |        |    |              |   |             |   |
| Interactive          | 0  |   |      |            |         |    |        |    |              |   |             |   |
| Level :              | S2   |   |      |            |         |    |        |    |              |   |             |   |
| Class :              | 2A   |   |      |            |         |    |        |    |              |   |             |   |
| Expected time :      | 20 minutes   |   |      |            |         |    |        |    |              |   |             |   |
| Unit :               | Living Things and the Environment  |   |      |            |         |    |        |    |              |   |             |   |
| Content Area :       | 6.3. Biodiversity and conservation<br>- effects of human activities on biodiversity and conservation                                   |   |      |            |         |    |        |    |              |   |             |   |
| Learning Outcome 1 : | - recognise the importance of biodiversity to the stability of an ecosystem and the sustainable development of the natural environment |   |      |            |         |    |        |    |              |   |             |   |
| Learning Outcome 2 : | - recognise the importance of environmental conservation and the protection of wild life   |   |      |            |         |    |        |    |              |   |             |   |
| Learning Outcome 3 : | ---  |   |      |            |         |    |        |    |              |   |             |   |

|                  | Characteristics of engagement mode  | L&T Activity to be Conducted   | Time (min) |
|------------------|---|--|------------|
| P<br>assive      | <p>The activity requires the student to watch a teacher led demonstration or listen to a lecture about the activity. There is no selection of materials or creative production.</p> <p>Individual student does not create anything that is not already present in the learning materials. If a procedure is involved, the procedure is rigid and will result in a predetermined outcome.</p> <p>Examples of action verb of the task:<br/>Listen, Look, Read, Observe</p>  | <input type="checkbox"/> Ask students listen to teacher explains new science content<br><input type="checkbox"/> Ask students watch teacher demonstrates an experiment or investigation<br><input checked="" type="checkbox"/> Ask students read science textbooks or other resource materials<br><input type="checkbox"/> Other: _____  | 10         |
| A<br>ctive       | <p>The activity involves the student performing physical manipulations, usually following a fixed procedure.</p> <p>Individual student may engage in a selection process, whereby they choose from multiple content, for example, among various procedures, data, or ways of presentation.</p> <p>Examples of action verb of the task:<br/>Annotate, Calculate, Categorise, Choose, Circle, Complete, Cross out, Describe, Fill in, Find, Follow the procedures, Identify, Label, List, Match, Measure, Record</p>  | <input type="checkbox"/> Ask students describe the natural phenomena observed<br><input type="checkbox"/> Ask students use scientific formulas and laws to calculate routine problems under guidance<br><input type="checkbox"/> Ask students conduct experiments (hands-on or virtually) according to step-by-step instructions<br><input type="checkbox"/> Ask students use computational models, simulations and other tools to generate data according to step-by-step instructions<br><input checked="" type="checkbox"/> Other: Ask students to choose suitable answers from scientific deduction exercises  | 10         |
| C<br>onstructive | <p>The activity requires the student to generate new ideas beyond what the materials provide. For example, if the learning activity involves generating a way of representing data and no examples of representing data are presented in the learning materials.</p> <p>Individual student would generate something new, that is something beyond what was provided in the learning materials. This could include, for example, a new idea, procedure, or way of representing data.</p> <p>Examples of action verb of the task:<br/>Ask questions, Build, Comment, Compare, Connect, Construct, Create, Decide, Determine, Draw, Explain, Generate, Justify, Predict, Sketch, Solve, Suggest, Summarise</p> | <input type="checkbox"/> Ask students ask authentic questions about scientific phenomena<br><input type="checkbox"/> Ask students predict the outcomes of experiments or investigations<br><input type="checkbox"/> Ask students formulate hypotheses based on observed phenomenon or provided information<br><input type="checkbox"/> Ask students use multiple sources of evidence / scientific concepts to explain scientific phenomena<br><input type="checkbox"/> Ask students create representations (e.g., models, graphs) to explain scientific phenomena<br><input type="checkbox"/> Ask students propose multiple / different / original solution to a scientific problem<br><input type="checkbox"/> Ask students draw conclusions from data to support or refute the hypothesis set<br><input type="checkbox"/> Other: _____ | 0          |
| I<br>nteractive  | <p>The activity requires more than one student to generate new ideas beyond what the learning materials provide.</p> <p>Two or more students engage in an intrinsically co-constructive activity, including substantial dialoguing rather than parallel monologues, to generate knowledge based on students' interaction.</p> <p>Examples of action verb of the task:<br/>Build upon, Discuss, Elaborate, Evaluate, Revise, Work in groups</p>  | <input type="checkbox"/> Ask students discuss and propose an original improvement to an experiment or investigation<br><input type="checkbox"/> Ask students argue about science questions and summarise by providing supporting and refuting arguments<br><input type="checkbox"/> Ask students evaluate the quality of the output from computational models, simulations and other tools and suggest further revisions, if any<br><input type="checkbox"/> Other: _____  | 0          |