The Big Bite Curriculum Information

The Australian Curriculum has Three Primary Educational goals for science learning across every year level, from Foundation (prep) to Year 12. This document focuses on the Foundation and Primary School curriculum links that the game has, and the areas of student learning that it can help enhance. Educational lessons and activities related to The Big Bite (TBB) can help increase student knowledge of each of these categories.

These three main categories for each year level are:
Science Understanding - awareness and knowledge of scientific concepts and methods
Science as a Human Endeavour - how humans do science, and how we use it in the world
Science Inquiry Skills - understanding and use of research skills, data gathering, report writing, and the scientific method

The Big Bite would be a useful learning resource for the following specific targets in each specific grade:

Relevance and Ideas for Year 3 and 4 Lessons and Curriculum Goals

Science Understanding

- Biological Sciences

  - Year 3 - Mosquitos have many observable features that distinguish them as living things, such as needing food, sleep, and reproduction, as well as being able to move and use all five senses. Any unit on insects could include a playthrough of this game.
  - Year 4 - TBB can prompt investigation and discussion into the complex life cycle of mosquitos and other insects, as well as how they function as part of a food chain or web.

- Chemical Sciences

  - Year 4 - due to the methods that can be chosen to reduce infection rates - including mosquito nets - this game can be useful for prompting discussion about the physical properties of stillwater (as breeding zones) and the materials mosquito nets are made from.

- Earth and Space Sciences

  - Year 3 - Mosquito activity increases at night, and their seasonal population numbers vary according to changes in Earth's rotation. Tracking these changes

can be an extension activity for the game.

Science as a Human Endeavour

- Nature and Development of Science

  - Years 3 & 4 - Observing patterns and changes is core to the game, as are investigating and describing relationships to different environmental factors. Additionally, the second half of the game involves predicting changes based on student-chosen interventions, and then testing and confirming these hypotheses. Players are able to make an important choice in terms of reducing the rate of infection spread from Mosquitos, and allows individuals or groups to observe and discuss the effect of their actions.

- Use and Influence of Science

  - Years 3 & 4 - The impact of human activity and the effect of human actions is a key part of this game. Students witness and attempt to directly mitigate these effects and learn about different dangers and methods of intervention.

Science Inquiry Skills

- *Questioning and Predicting*

  - Years 3 & 4 - Students can gain greater familiarity with how mosquito-borne diseases spread through engaging play, and then use that familiarity to make better predictions due to their enhanced prior knowledge. This knowledge can then be used to help structure further scientific investigations.
  Observations of the different viral spread rates (which change each round) can allow for some simple informal data to be gathered for the creation of graphs, drawings, tables, and so forth.

- *Planning and Conducting*

  - Years 3 & 4 - This game allows exploration and discussion of a variety of techniques and equipment.
  Observations of the different population levels in particular populations (which change each round) allow for some informal and simple data to be gathered, useful to the creation of graphs, drawing, tables, and so forth.
  The Bite Bite allows students to help generate actual data that is used by scientists, and enhances their understanding of when, where, how, why and by

whom this data is gathered.

- *Processing and Analysing Data and Information*

  - Years 3 & 4 - The Big Bite can provide custom data that allows players to use a range of methods to sort information, including drawings and tables, and can inspire discussion that compares observations with predictions made before, during, and after playing the game.
    Students can use the game to gain knowledge to predict what impacts their own interventions will have on the insect populations.

- *Evaluating*

  - Years 3 & 4 - With previously made predictions based on gameplay and the uncertainty of the semi-randomised content, students can reflect on investigations and learn more about scientific experiments and the fairness of tests and testing methods.

- *Communicating*

  - Years 3 & 4 - Students can represent and communicate their observations and idea in a variety of ways both during and after the game, by writing, drawing, talking about, calculating, discussing, and so forth. The game is fun and provides lots of information that students can reflect on later as groups.