Binary Detectives – Teacher Info

The Binary Detectives resource aims to provide students with a hands on learning experience on Binary numbers and number patterns. The resource is aligned with the Australian Curriculum: Technologies Digital Technologies Strand, for Year 5/6. This resource covers the key idea stated in the technology curriculum of Computational Thinking.

**General Capabilities:**

* Information Communication and Technology (ICT)
* Critical and Creative Thinking

**Curriculum Information:**

*Digital Technologies Processes and Production Skills* (assigned) ACTDIP002

* + - plan, create and communicate ideas and information, including collaboratively online, applying agreed ethical, social and technical protocols

*Digital Technologies Knowledge and Understanding* (complementary) ACTDIK015

* + - Examine how whole numbers are used to represent all data in digital systems

**Formative Assessment:**

* Students are required to work in pairs to write their partners age and birth date in binary numbers
* Students will swap with another pair where they will translate their binary code.

*See Marking Rubric below*

**More Information:**

* Links to more information:
  + Maths is Fun – Binary Number System

<https://www.mathsisfun.com/binary-number-system.html>

* + Ducksters – Binary Numbers

<http://www.ducksters.com/kidsmath/binary_numbers_basics.php>

**Formative Assessment: Marking Rubric**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Low level understanding** | **Working towards understanding** | **Demonstrates understanding** |
| Constructing binary codes. | Students demonstrate little understanding on binary codes and their creation. Numerous errors are present with little to no pattern present | Students demonstrate a competent understanding although further teaching is required. There are visible links and understandings of binary codes and their creations, with few errors | Students demonstrate a informed understanding of binary codes and their creation. Few to no errors are present. |
| Interpreting and translating binary codes. | Students demonstrate little understanding on binary codes and their translation. Numerous errors are present with little to no link to original code | Students demonstrate a competent understanding although further teaching is required. There are visible links and understandings of binary codes and their translation with few errors | Students demonstrate an informed understanding of binary codes and their translation. Code is translated with few to no errors present. |