Student worksheet: Binary challenge

Here are the words ‘Aboriginal and Torres Strait Islander Peoples’.

Choose a word to complete the representation in binary.

Draw squares and shade in black to represent the letter (on and off).

Or use the binary squares to work out and write the binary number.

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| Letter  | On and off representation  | Binary number |
| A | Binary representation of the capital letter A using 8 squares coloured black or white.   | 0100 0001 |
| b | Binary representation of the lowercase letter b using 8 squares coloured black or white.  |  |
| o | Binary representation of the lowercase letter o using 8 squares coloured black or white.  |  |
| r | Binary representation of the lowercase letter r using 8 squares coloured black or white.  |  |
| i | Binary representation of the lowercase letter  i using 8 squares coloured black or white.  |  |
| g | Binary representation of the lowercase letter g using 8 squares coloured black or white.  |  |
| i | Binary representation of the lowercase letter i using 8 squares coloured black or white.  |  |
| n | Binary representation of the lowercase letter n using 8 squares coloured black or white.  |  |
| a |  | 0110 0001 |
| l | Binary representation of the lowercase letter l using 8 squares coloured black or white.  |  |

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| Letter  | On and off representation  | Binary number |
| a |  | 0110 0001 |
| n |  | 0110 1110 |
| d | Binary representation of the lowercase letter d using 8 squares coloured black or white.  |  |

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| Letter  | On and off representation  | Binary number |
| T | Binary representation of the capital letter T using 8 squares coloured black or white.  |  |
| o | Binary representation of the lowercase letter o using 8 squares coloured black or white.  |  |
| r |  | 0111 0010 |
| r |  | 0111 0010 |
| e | Binary representation of the lowercase letter e using 8 squares coloured black or white.  |  |
| s | Binary representation of the lowercase letter s using 8 squares coloured black or white.  |  |

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| Letter  | On and off representation  | Binary number |
| S | Binary representation of the capital letter S using 8 squares coloured black or white.  |  |
| t | Binary representation of the lowercase letter t using 8 squares coloured black or white.  |  |
| r |  | 0111 0010 |
| a |  | 0110 0001 |
| i |  | 0110 1001 |
| t |  | 0111 0100 |

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| Letter  | On and off representation  | Binary number |
| I | Binary representation of the capital letter I using 8 squares coloured black or white.  |  |
| s |  | 0111 0011 |
| l |  | 0110 1100 |
| a |  | 0110 0001 |
| n |  | 0110 1110 |
| d |  | 0110 0100 |
| e | Binary representation of the lowercase letter e using 8 squares coloured black or white.  |  |
| r |  | 0111 0010 |

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| --- | --- | --- |
| Letter  | On and off representation  | Binary number |
| P | Binary representation of the capital letter P using 8 squares coloured black or white.  |  |
| e | Binary representation of the lowercase letter e using 8 squares coloured black or white.  |  |
| o |  | 0110 1111 |
| p | Binary representation of the lowercase letter p using 8 squares coloured black or white.  |  |
| l | Binary representation of the lowercase letter l using 8 squares coloured black or white.  |  |
| e | Binary representation of the lowercase letter e using 8 squares coloured black or white.  |  |
| s |  | 0111 0011 |