**BLM 7.PR.12C: Representing Equivalent Expressions on a Balance Scale Using Variables for Unknowns (Sample)**

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| **Concrete**  **Action** | **Pictorial**  **Representation** | **Symbolic Representation** |
| **Step One**  One student conceals the same quantity of blocks in one or more bags. The student places the bags and some blocks on one pan of the balance, counting them out loud  (*b +* 4). | tipped scale with 1 bag and four blocks  BLM 7PR12C Representing Equivalent Expressions 1.jpg | *b* + 4 |
| **Step Two**  Another student balances the scale by counting a quantity of blocks and placing them on the other pan, until it balances. | 1 bag and 4 blocks balanced by  7 blocks  BLM 7PR12C Representing Equivalent Expressions 2.jpg | *b* + 4 = 7 |
| **Step Three**  Another student who has determined how many blocks are in the bag can rearrange the quantity on the second pan by concealing the same number of blocks in each of a different number of bags, and leaving the remaining blocks separate. The scale will balance with 2 bags and  1 single block. | 1 bag and 4 cubes balance 2 bags and 1 cube  BLM 7PR12C Representing Equivalent Expressions 3.jpg | *b* + 4 =2*b* + 1 |
| **Step Four**  If other students can rearrange the blocks in a different way, they demonstrate this.  If not, they can tell how many blocks are in a bag, and explain how they know. |  | *b* = 3 |