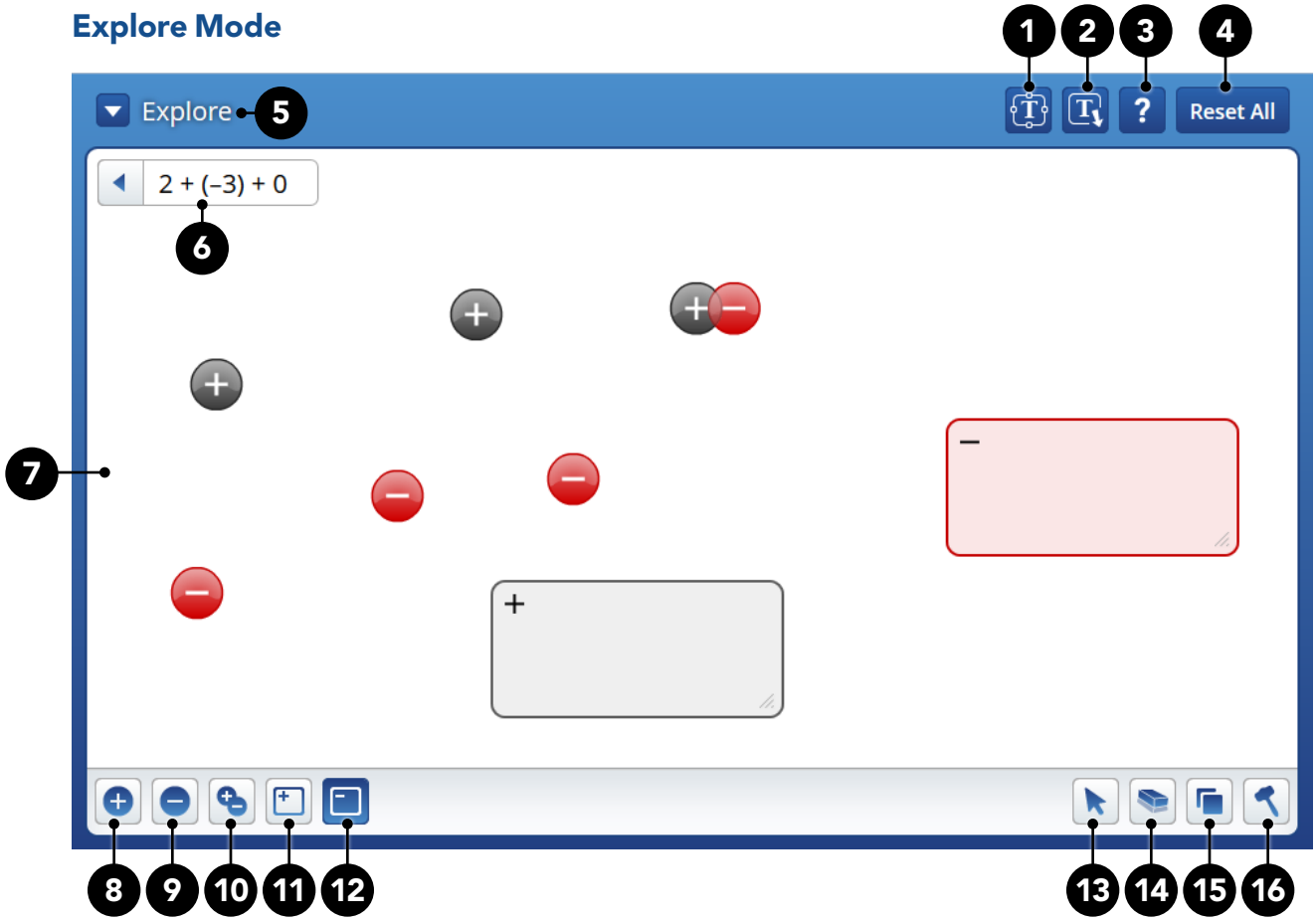
Integer Chips

In this tool, you can model and solve expressions using integer chips.

Explore Mode



1. **Textbox** Add annotations to the activity area.
2. **Textbox with Arrow** Add comments to the activity area, using the arrow to focus attention on a particular area.
3. **Help** Launch a help file PDF for the tool.
4. **Reset All** Reset all current work in the activity area for the tool back to the default settings.
5. **Mode Drop-down** Shows all the available modes of the Integer Chips tool. Selecting a mode will open the tool to that mode, and save any current work in the mode you were previously working in. There are three modes in the Integer Chips tool: Explore, Addition, and Subtraction.
6. **Expression Display** Shows the collective value of each chip type in an expression. The sum of any zero pair(s) present will always show a value of "0" in the display area.

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Explore Mode *continued*

7. **Activity Area** The area of the tool where chips can be added and manipulated. A maximum of 100 chips of any combination can be added to activity area.
8. **Positive Chip** When selected, each press in the activity area will add a "+" chip.
9. **Negative Chip** When selected, each press in the activity area will add a "–" chip.
10. **Zero-pair chip** When selected, each press in the activity area will add a zero-pair chip.
11. **Positive Mat** When selected, each press in the activity area will add a Positive Mat. Chips placed on a Positive Mat show their original value in the expression display.
12. **Negative Mat** When selected, each press in the activity area will add a Negative Mat. Chips placed on a Negative Mat show the opposite of their original value in the expression display.
13. **Pointer** Use the pointer to select and move chips within the activity area. When the pointer is selected, you can create a selection rectangle to select more than one chip to manipulate. When selected, a chip will have an orange glow around it. You can also use the pointer to create a zero pair by dragging a chip next to its opposite.
14. **Eraser** Using the eraser, you can select any chips(s) to remove them from the activity area.
15. **Clone** Using the clone button, you can press on any selected chips(s) to create duplicates of the selected chips(s). You can use the clone feature until the chip limit is achieved in the activity area.
16. **Hammer** Using the hammer button, you can break zero pairs apart. When the hammer button is selected, you can only manipulate the zero pairs remaining in the activity area. If there are no zero pairs remaining in the activity area, the hammer button is disabled.

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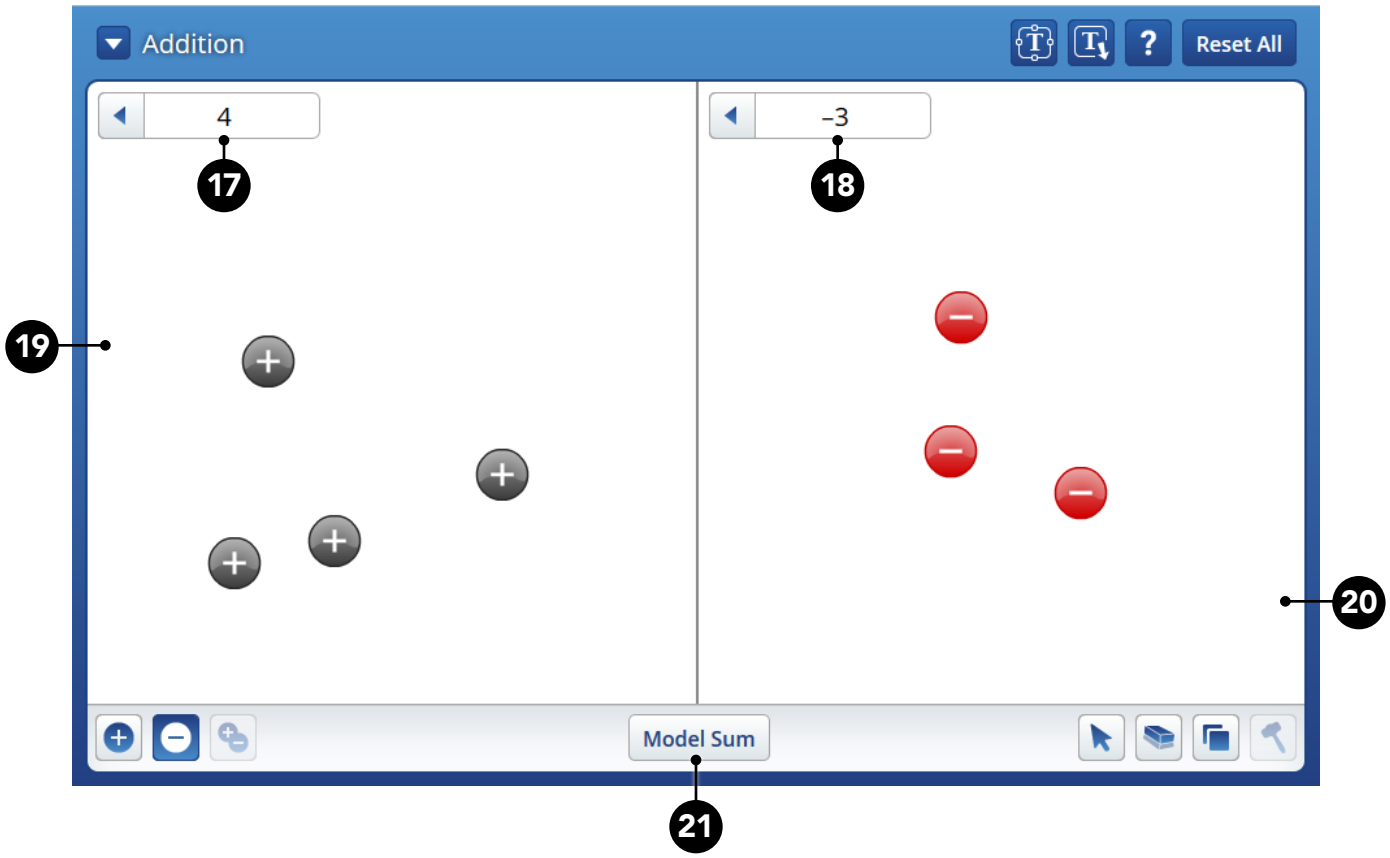
Integer Chips

Addition Mode – Part 1



17. **First Addend Bin Display** Shows the collective value of each chip type in the left expression bin as an expression. The sum of any zero pair(s) present will always show a value of "0" in the display area.
18. **Second Addend Bin Display** Shows the collective value of each chip type in the left expression bin as an expression. The sum of any zero pair(s) present will always show a value of "0" in the display area.
19. **First Addend Bin** You can add chips to the bin to model an expression.
20. **Second Addend Bin** You can add chips to the bin to model an expression.
21. **Model Sum Button** Select to add the two expressions together. The Model Sum button will become active when each expression bin has chips of a single type.

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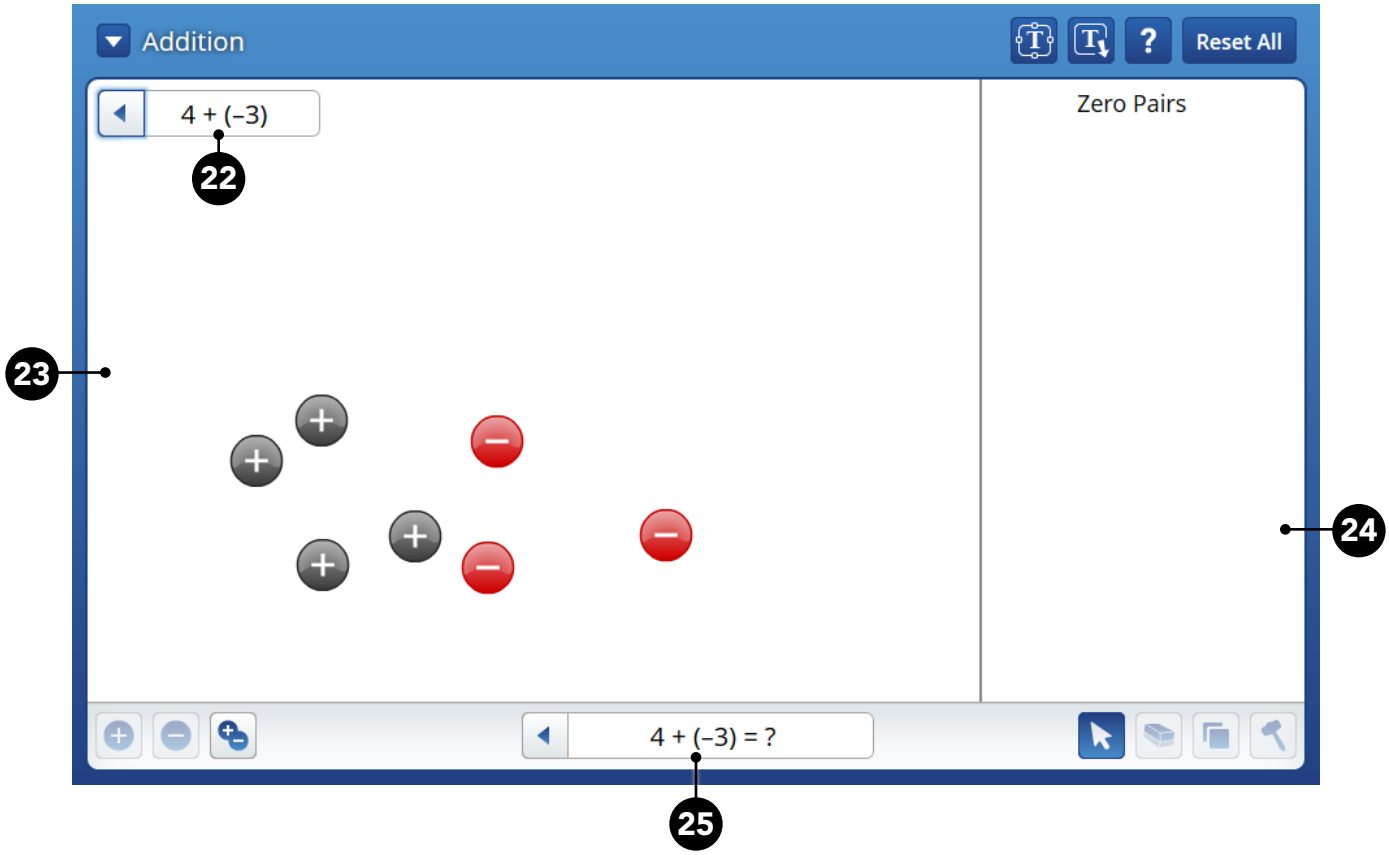
Integer Chips

Addition Mode – Part 2



22. **Sum Bin Display** Shows the collective value of each chip type in the sum bin as an expression. The sum of any zero pair(s) present will always show a value of "0" in the display area.

23. **Sum Bin** Combines the two expressions from the Addends prior to the Model Sum button. You can only add zero pairs to the bin at this stage.

24. **Zero Pair Area** To simplify the expression, all zero pairs must be moved into the zero pair area. Only zero pairs may be moved into this area.

25. **Equation Display** Shows an equation with the two addends from the previous screen on the left side of the equal sign and a "?" on the other. Once the expression in the Sum bin is simplified, the value of the sum of the two addends will appear in the position of the "?".

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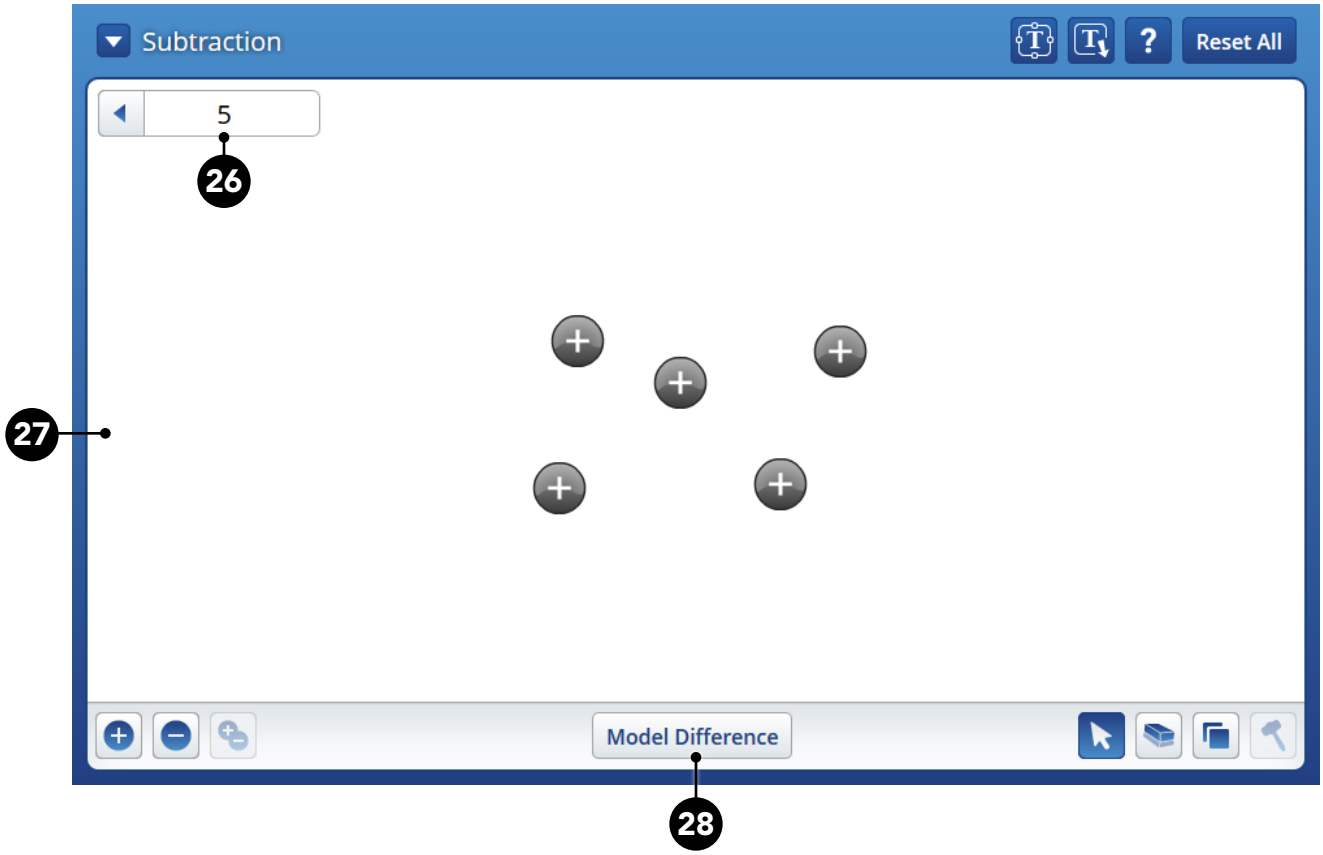
Integer Chips

Subtraction Mode – Part 1



26. First Number Bin Display Shows the collective value of each chip type in the bin as an expression.

27. First Number Bin You can add chips to the bin to model an expression.

28. Model Difference Button Select to find the difference. The Model Difference button will become active when the First Number Bin has chips of a single type.

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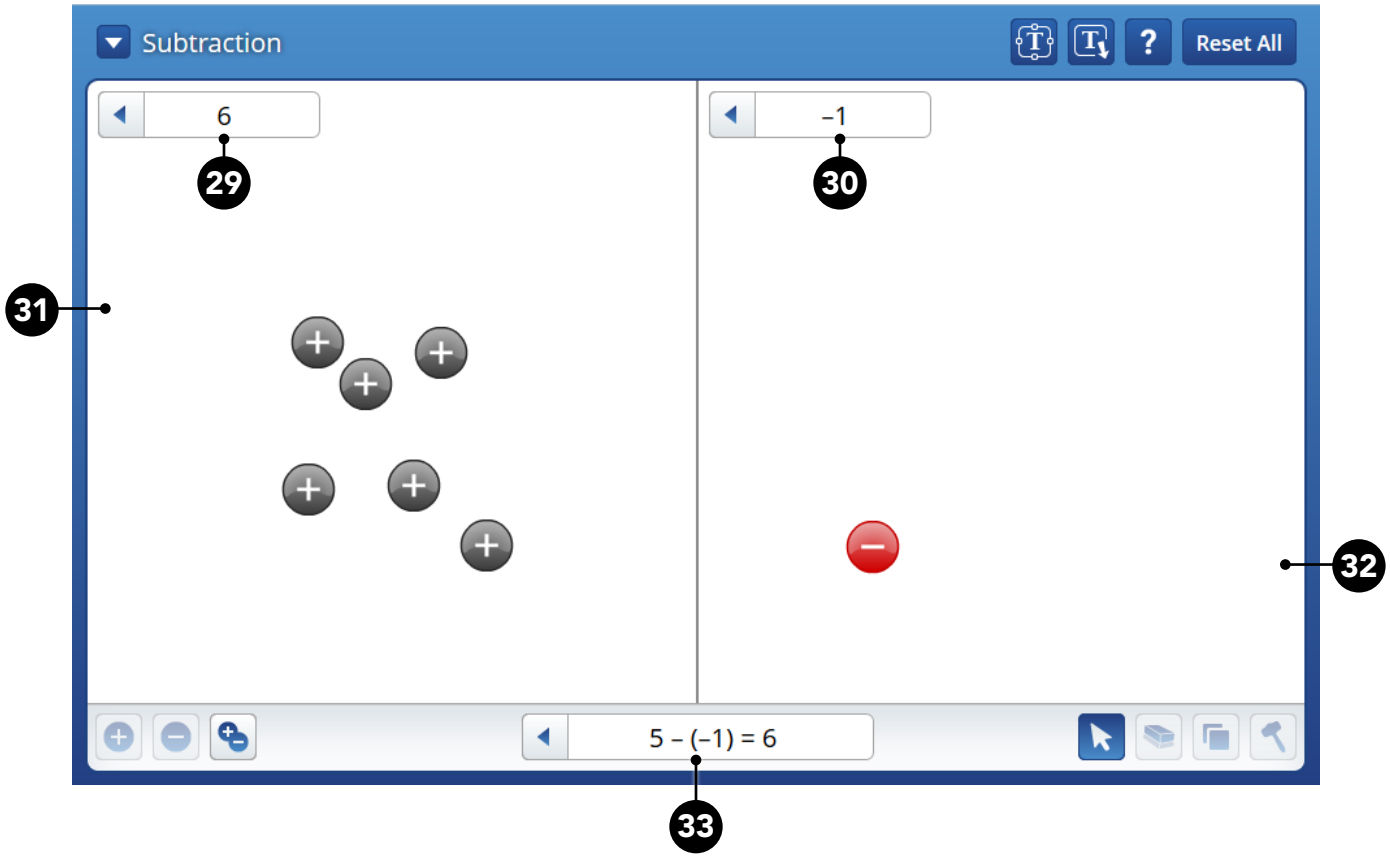
Integer Chips

Subtraction Mode – Part 2



29. Difference Bin Display Shows the collective value of each chip type in the Difference Bin as an expression. The sum of any zero pair(s) present will always show a value of "0" in the display area.

30. Second Number Bin Display Shows the collective value of each chip type in the bin as an expression.

31. Difference Bin After selecting the Model Difference Button, the bin shows the chips for the first number. As the second number is created, this bin shows the collective value of the difference between the first number and the second number. You may only add zero pairs to this bin

32. Second Number Bin You can move chips from the difference bin to model an expression. To model the second number with chips opposite those of the first number, you must first add zero pairs to the Difference bin and break them with the hammer. Then you can move the chips into the second number bin.

33. Equation Display Shows an equation with the two numbers you modeled and the difference between the two numbers.