Work in pairs, with one person using the mouse and the other person taking notes on this worksheet. Switch roles as you find something you notice or wonder.

**Sketch Page 1:** Use the Point tool (to make an independent variable), the Mirror tool (to make the function rule), and the Reflect tool (to make the dependent variable).

Drag *x* around. What do you notice?

Things we wondered:

**Q2** On page 2 what did you notice, or wonder, about the traces of these variables?

**Q3** For page 2, fill in the table.   
An *independent variable* is a variable you can drag.  
A *dependent variable* moves only when you drag its independent variable.   
A *fixed point* is a place where you can drag the variables on top of each other.

|  |  |  |
| --- | --- | --- |
| **Independent Variable** | **Dependent Variable** | **Description of Relation** |
| **→** | | **Speed:**  **Direction:**  **Fixed Points:** |
| **→** | | **Speed:**  **Direction:**  **Fixed Points:** |
| **→** | | **Speed:**  **Direction:**  **Fixed Points:** |
| **→** | | **Speed:**  **Direction:**  **Fixed Points:** |
| **→** | | **Speed:**  **Direction:**  **Fixed Points:** |

**Q4** On page 1, drag the independent variables. What do you notice?

|  |  |  |
| --- | --- | --- |
| **Function** | **Non-function** | **Things I noticed and/or wondered** |
| *x → x'* | *y → y'* |  |

**Q5** On page 2, what do you notice? Do the arrows affect the behavior?

|  |  |  |
| --- | --- | --- |
| **Function** | **Non-function** | **Things I noticed and/or wondered. Do the arrows affect behavior?** |
| *b → b'* | *a → a'* |  |

**Q6** On pages 3–10, only one *relation* on each page is a *function*. For each page, identify the function and write what you noticed and/or wondered.

|  |  |  |  |
| --- | --- | --- | --- |
| **Page** | **Function** | **Non-functions** | **Things I noticed and/or wondered** |
| **3** |  |  |  |
| **4** |  |  |  |
| **5** |  |  |  |
| **6** |  |  |  |
| **7** |  |  |  |
| **8** |  |  |  |
| **9** |  |  |  |
| **10** |  |  |  |

**Q7** In your own words, write a definition of *function* in complete sentences, using the terms *independent variable* and *dependent variable*.