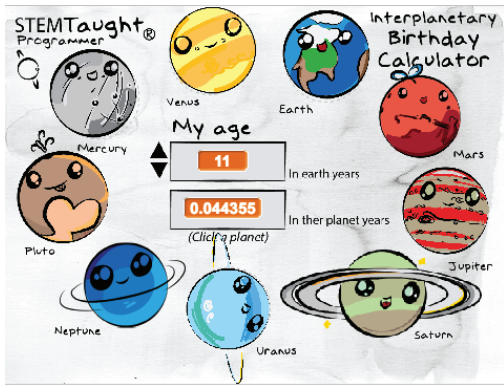# Master Code Key: Interplanetary Birthday Calculator
STEMTaught®
Teacher Edition

Coding the Background:

Note: This code is in the background pane because it not associated with any specific sprites.

Programming objective:
- Causes "My Age" change when you press the up and down arrow keys.
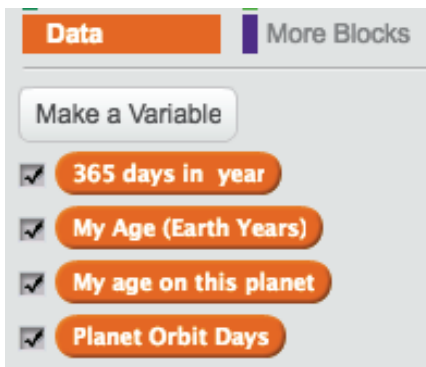- Sets all the variables to 0 when the start flag is pressed

Sprite 1: Mercury code

When you input your age and then click on Mercury this code will display how old you are in Mercury years, this is how many times Mercury has orbited the sun during your lifetime.
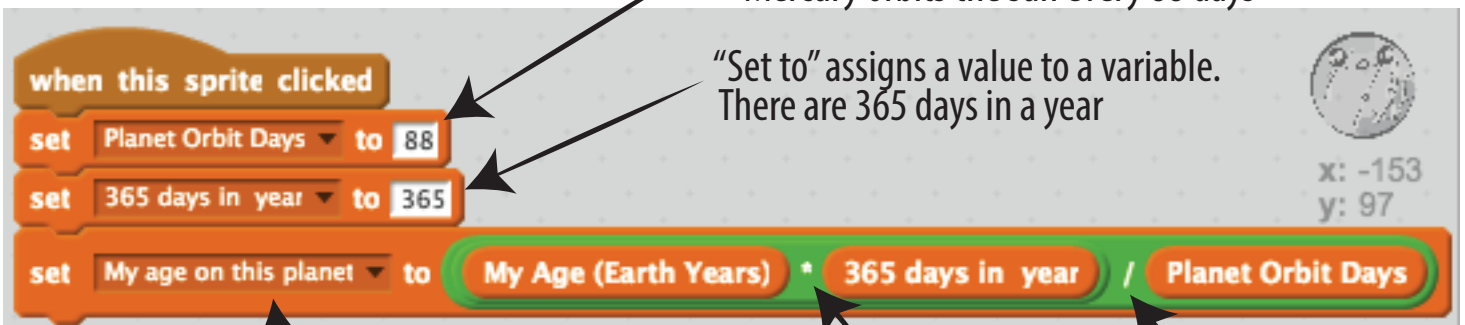
Programming objective:
- Making a variable allows you to name or label a number
- Students learn to insert math into their code

This explanation of the code applies to all the planet sprites.

First students will use the "Make a Variable" button in the data tab to name these 4 variables. Variables are simply names for numbers.

"Set to" assigns a value to a variable.
The number from chart on student worksheet
Mercury orbits the sun every 88 days

"Set to" assigns a value to a variable.
There are 365 days in a year

* is multiplication   / is division

This math expression reads:

$$\text{My age on this planet} = \frac{\text{My Age (Earth Years)} \times \text{365 Days in a Year}}{\text{Planet Orbit Days}} = \frac{10 \times 365}{88}$$