



The Data Literacy Company

[Tuva Tools Editions](#)

- [Tuva Jr. Preset](#)
- [Elem-Middle Preset](#)
- [Middle Preset](#)
- [High Preset](#)

Tuva Tools Editions

Purpose

This document gives an overview of the four different Tuva Tools editions **Tuva Jr.**, **Elem-middle**, **Middle**, and **High**. The Tuva Authoring Environment enables both Tuva and its partners to customize



tools for their audience. Creators can choose between pre-compiled editions of the tool via the authoring environment. Each edition focuses on data concepts and

skills relevant to the concerned grade band. Currently, there are four available presets: **Tuva Jr.**, **Elem-middle**, **Middle**, and **High**. These presets adjust the toolbar to display features suited for the respective school levels. Notably, Tuva Jr transforms the entire data environment to fit the needs of elementary school kids.

How to Use

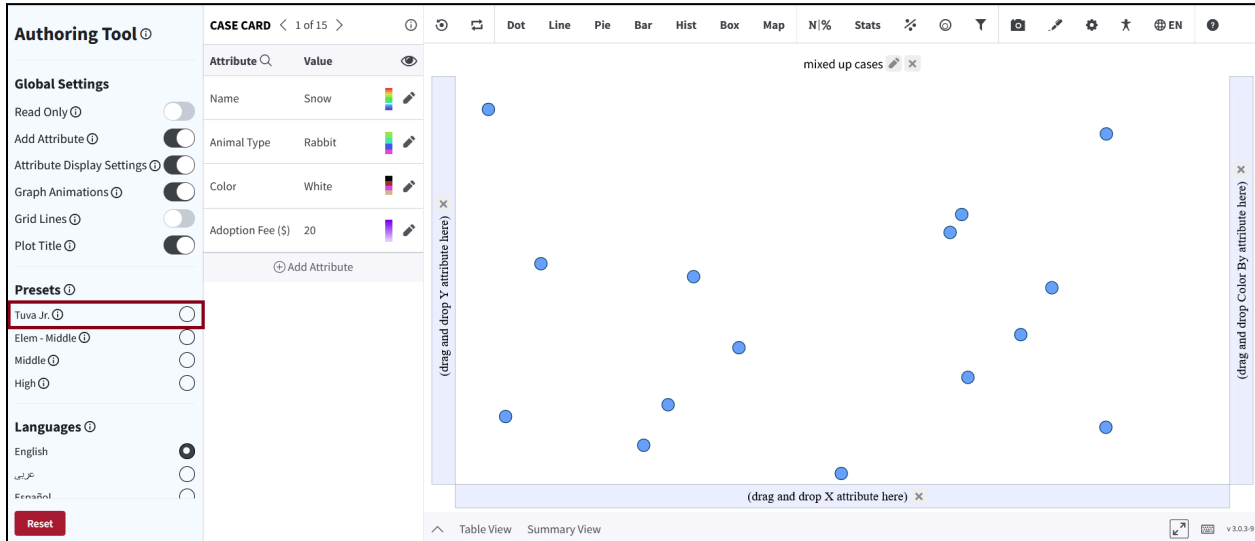
The four editions are described in more detail below. Scroll down to learn about the distinctions between each edition. Use the chart at the bottom to compare the editions side by side.



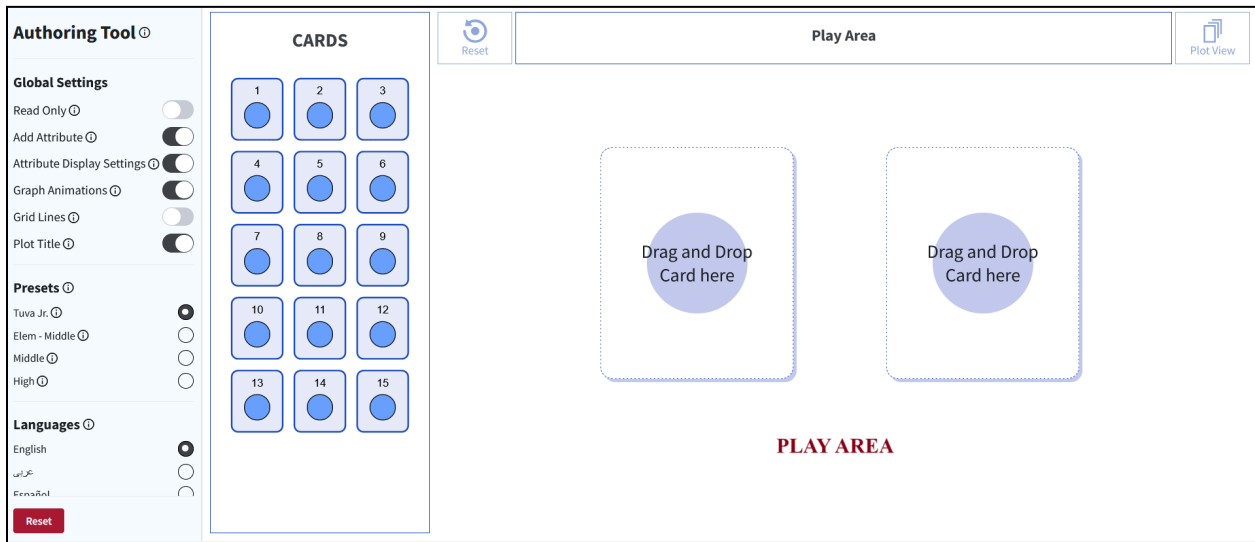
The Data Literacy Company

Tuva Jr. Preset

The Tuva Jr. edition is activated using a radio button under **Presets**.



The default view for Tuva Jr, is the PLAY VIEW. This view leverages the metaphor of a card game that involves dragging and dropping cards into the Play Area and sorting attributes.

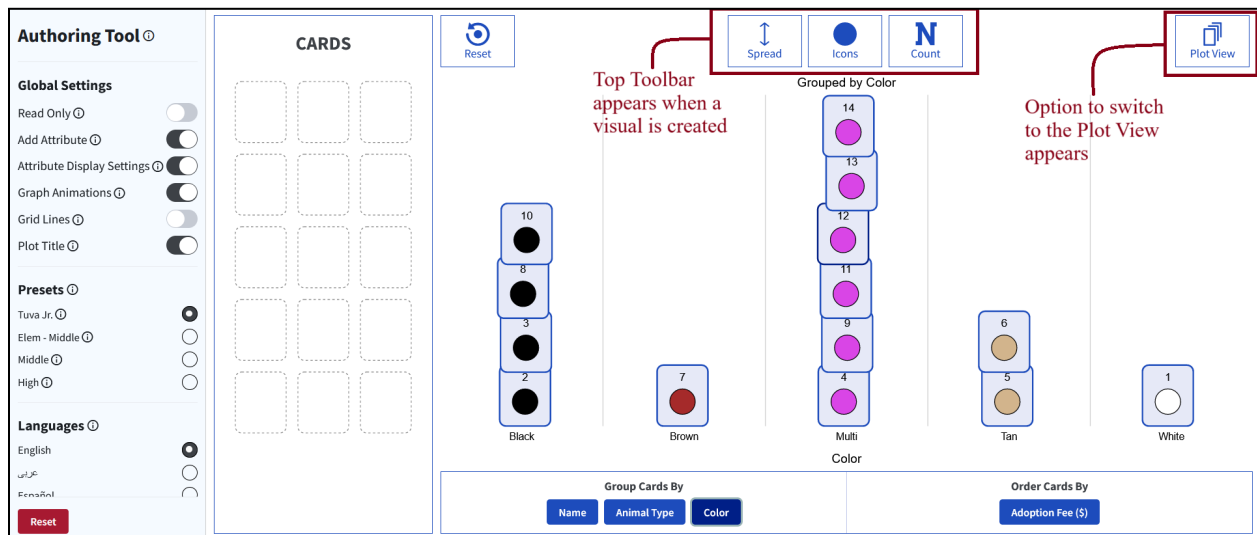




The Data Literacy Company

Thus, Tuva Jr. defines a marked pedagogical shift in design based on research that indicates several aspects of the Middle School edition of the Tuva Tools that could potentially pose challenges for very young children such as the initial random state of cases, the CASE Card view, and the toolbar.

Elements in the Play Area appear step-by-step. After placing a Card, the bottom data action bar appears. Sorting cards by attributes triggers the top toolbar. This gradual introduction approach reduces cognitive load and streamlines options, preventing overwhelming choices for young learners.

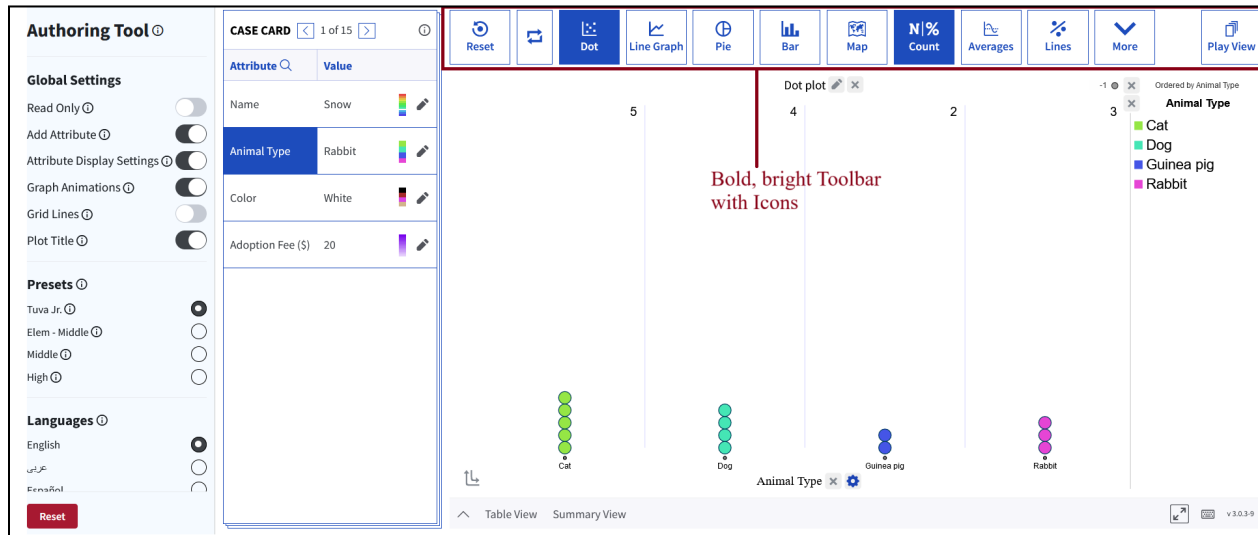


The environment is uncluttered for ease of use.



The Data Literacy Company

Similarly, the Plot View in Tuva Jr. has fewer, bigger icons with larger fonts. All the icons used are visually meaningful to children.



Thus, Tuva Jr. learners progress from the engaging PLAY view to the more intricate plot view.

Elem-Middle Preset

This mode is meant to cater to students transitioning from elementary school to middle school. Most toolbar menu items are hidden; the idea is to reduce the complexity of the graphing environment so that students can focus on concepts essential to their level. Further, each submenu in the toolbar has fewer options. For example, the **Model Data** menu only offers the **Movable line**. The Least Squares Line and the $f(x)$ functionality have been removed.



The Data Literacy Company

Attribute	Value
Gender	Female
Species	tredecula
Body Weight (grams)	0.25
Wing Length (millimeters)	28
Wing Width (millimeters)	11
Body Length (millimeters)	28

Middle Preset

This mode is meant to cater to students in middle school. Most toolbar menu items are available, and the submenus have more options as compared to the Elem-Middle edition.

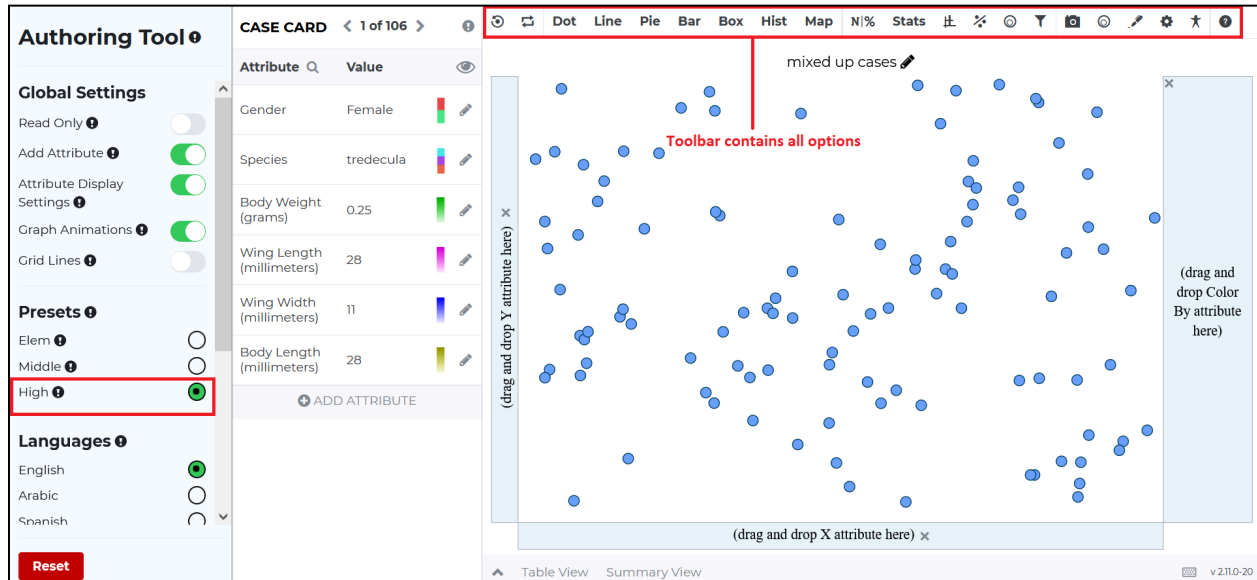
Attribute	Value
Gender	Female
Species	tredecula
Body Weight (grams)	0.25
Wing Length (millimeters)	28
Wing Width (millimeters)	11
Body Length (millimeters)	28



The Data Literacy Company

High Preset

The toolbar menu shows all options, and this mode is meant to cater to students in high school.



Side-by-side Comparison

Here's a quick snapshot of how the four editions compare in terms of concepts and skills:

Tuva Jr.	Elem-middle Mode	Middle Mode	High Mode
Ask simple questions of data (about individuals in a group or a single attribute)	Display Numerical Data in Elementary Dot Plots & Bar Charts of Values to explore min/max values, extreme values, and range of data	Elem Mode +	Middle Mode +
Read and describe an individual card of interest	Display and Read Data in Scatter Plots & Line Graphs to explore trends and associations informally	Create and interpret distributions of data using dot plots, box plots & histograms	Interpret variability using Standard Deviation (SD) as a measure of spread
Compare two case cards (by comparing one or more attributes)		Compare Groups using parallel dot plots, parallel box plots, & parallel histograms	Establish bimodality using SD
Understand that each		Describe and interpret	Compare groups using SD
			Use Two-way

TUVA LABS INC.

www.tuvalabs.com

@tuvalabs

hello@tuvalabs.com

+1.646.481. 2150



The Data Literacy Company

<p>card/icon represents a single individual or event Differentiate between categorical and quantitative attributes</p> <p>Estimate number of cards in a category by stacking and subitizing</p> <p>Compare categories using the count function</p> <p>Express the count of a given category as a part of the whole, that is, as a fraction</p> <p>Compare attributes with fractional or decimal values</p> <p>Find the minimum and maximum values for the attribute chosen to order the cards</p> <p>Informally describe the range of values for the attribute</p> <p>Identify the value that has the highest frequency</p> <p>Begin thinking about what is typical of a group</p> <p>Describe rudimentary associations between two quantitative attributes</p> <p>Read and interpret</p>	<p>Display and Read Aggregated Data in Bar Charts of Frequencies, Pie Graphs & Stretched Bar Charts</p> <p>Build familiarity with Axis Scale & Create Scaled Intervals</p> <p>Manipulate data by filtering and dragging categorical attributes</p> <p>Display data in Maps to Build Familiarity with Spatial Distributions</p>	<p>associations between Categorical attributes using Dot Plots & Two-way Tables</p> <p>Describe Distributions using Mean, Median, MAD and IQR</p> <p>Describe the direction and strength of linear relationships using informal tools</p> <p>Use multiple line graphs to represent ordered data and to compare localized and overall trends across locations or categories</p> <p>Model and interpret trends & linear relationships using the Movable line</p> <p>Manipulate Slider Parameters to Fit Linear data</p> <p>Use rates & proportions to compare groups of unequal sizes</p> <p>Create and interpret Bar Charts of Sums and Bar Charts of Means</p> <p>Choose between frequency, relative percentage and relative proportion scales in data displays</p>	<p>Tables/Contingency Tables to study conditional probabilities and to establish associations</p> <p>Describe the strength and direction of a linear relationship using the Coefficient of Correlation Use the Least Squares Line for Linear regression analysis</p> <p>Judge the fit of a Linear Model using the Show Squares feature</p> <p>Use the $f(x)$ functionality to model and interpret linear & nonlinear relationships</p> <p>Manipulate slider parameters to fit nonlinear data (quadratic, exponential, cubic, etc.)</p> <p>Use Standard Error as a metric to find the difference from the true mean</p> <p>Visualize and interpret the Distribution of Sample Statistics</p> <p>Explore the Central Limit Theorem</p> <p>Compute z-scores to standardize a distribution</p>
---	--	---	---



The Data Literacy Company

ordered pairs in a scatter plot		Generate random samples from populations Generate multiple samples to explore sampling variability Study the effects of sample size on representativeness of the sample	Assess the Normality of a Distribution using multiple SDs and z-scores
---------------------------------	--	---	--