Algebra 1 – WH name Click here to enter text.  
Classwork – Definitions Exploration date Click here to enter a date. Period Choose an item.

Suppose we want to make an image that had fifty identical, solid red triangles. You would have to write (triangle 50 "solid" "red")(triangle 50 "solid" "red") fifty times! To make matters worse, any change to those triangles would have to be repeated for all fifty expressions! Good programmers know that their effort is better spent elsewhere, so they made sure that programming languages have a way to avoid all that repetition. They write something once, define it as a shortcut in the language, and then use the shortcut wherever they want.

Here’s an example definition that defines shape1shape1 to be a solid red triangle:

(define shape1 (triangle 50 "solid" "red"))

Follow these steps in Wescheme.org:

* + Enter the shape1shape1 definition into the Definitions Window.
  + Click "Run" to have the computer read that definition.
  + What do you think will happen when you evaluate shape1shape1 in the Interactions window?

**Click here to enter text.**

* + Add a new line to the definitions window, just below the definition of shape1shape1. Add a new definition called shape2shape2, and define it to be a solid, blue circle of radius 20.
  + Click "Run", and try evaluating shape2.shape2. Snip it.  
     
  + On the next line, define a new value called ageage to be the number of years old that you are.
  + On the next line, define a new value called namename to be the String that represents your name.

**Each time "Run" is clicked, the computer reads all of the definitions and adds them to the language. If a definition is changed, the computer will keep using the previous definition until the next time "Run" is clicked.**

Follow these steps in Wescheme.org:

* + One a new line in the Definitions Window, define a value called eye-color to be the color of your eyes. Don’t hit "Run" yet!
  + Go into the Interactions Window and try evaluating eye-coloreye-color. You should get an error message that the computer doesn’t know about eye-coloreye-color, because you didn’t click "Run" after adding the definition.
  + Click "Run".
  + Try asking for eye-coloreye-color in the Interactions Window again. This time, you should not get the error.

**Definitions are useful because we can reuse them in other expressions. For example, we could use  
eye-coloreye-color inside another expression, such as (circle 10 "solid" eye-color)(circle 10 "solid" eye-color). Let’s practice using definitions inside other expressions. Try it and snip it!**

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