Unit 3 Bootstrap :

Review (5 min) worksheet:

Circles Completion

Math   Circle of Evaluation

(3 * 7) - (1 - 2)

3 - (1 + 2)

3 - (1 + (5 * 6))

(1 + (5 * 6)) - 3

Warm-Up (5 min) on board:

;mystery : Number String String String -> Image

1.) Underline the Name of this function
2.) Circle the Domain of this function
3.) Put a box around the Range of the function

4.) Image is a …

a. Function   b. Type   c. Value

5.) 6281 is a …

a. Function   b. Type   c. Value

6.) - is a …

a. Function   b. Type   c. Value

7.) "red" is a …

a. Function   b. Type   c. Value

Definitions : (15 min)

Can give names to values using define statements:

(define pinkstar (star 50 "solid" "pink"))

Solid pink star of size 50
is stored in value **pinkstar**

Definitions are useful because you can use them in other expressions. For example,

(define pinkstar (star 50 "solid" "pink"))
(define purpstar (star 100 "solid" "purple"))

pinkstar and **purpstar** can be used in overlay function:

(overlay pinkstar purpstar)

Try it out!

Defining Functions (20 min) :

Define a function **gt**, which takes a Number and produces a solid, green triangle of the given size.

Whats values will always be the same with each call of the function? (solid, green, triangle)
What value could be different? (size)
What is Name of function? (gt)
What is the Domain of function? (Number) What is the Range? (Image)

;gt Number -> Image

Go through Examples, and how they help see what is variable and what is constant


```
                   size              size
(EXAMPLE  (gt  50)    (triangle  50  solid"  "green"))
(EXAMPLE  (gt  100)   (triangle  100 "solid" "green"))
```

1.Copy everything that stays the same (everything that wasn't circled) in one of your EXAMPLE lines (onto paper or into your editor)
2.In place of each circle, write the label you gave to that circle
3.Change EXAMPLE to define

1.(EXAMPLE (gt 50) (triangle 50 "solid" "green"))
2.(EXAMPLE (gt 100) (triangle 100 "solid" "green"))
3.(define (gt size) (triangle size "solid" "green"))

These steps are known as DESIGN RECIPE

Go through example of making a picture of a dartboard, by defining functions for the two different colored circles on WeScheme

Introduce put-image function:

;put-image Image Number Number Image -> Image

put-image is just like overlay, except it also takes in x,y coordinates as inputs.
The Image isn't necessarily centered on top of another Image
Can make a lot more interesting shapes!
Go through example of making Colorado flag using put-image on WeScheme