



TURTLE BLOCKS:

AN INTRODUCTORY MANUAL

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I. WHAT IS TURTLE BLOCKS?

A. DESCRIPTION

TURTLE BLOCKS OR TURTLE ART IS AN ACTIVITY WITH A LOGO-INSPIRED GRAPHICAL "TURTLE" THAT DRAWS COLORFUL ART BASED ON SNAP-TOGETHER VISUAL PROGRAMMING ELEMENTS. WITH THIS PROGRAM, YOU CAN CHALLENGE YOUR CREATIVITY TO CREATE A HOLISTIC ARTWORK.

GO TO [HTTP://WIKI.SUGARLABS.ORG/GO/ACTIVITIES/TURTLEART](http://wiki.sugarlabs.org/go/activities/turtleart) FOR MORE INFORMATION

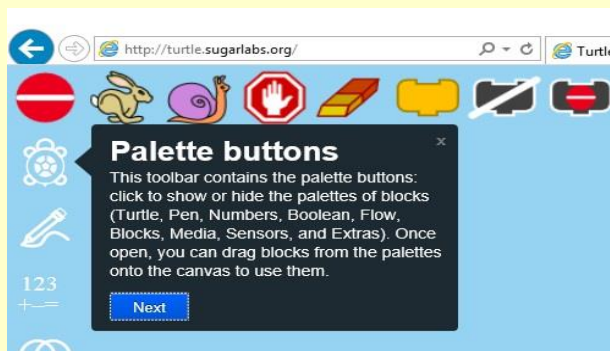
B. WHERE TO PLAY

YOU CAN ACCESS TURTLE BLOCK AT [HTTP://TURTLE.SUGARLABS.ORG/](http://turtle.sugarlabs.org/). FOR GNU/LINUX USERS, A PYTHON VERSION IS AVAILABLE AT [HTTP://ACTIVITIES.SUGARLABS.ORG/EN-US/SUGAR/ADDON/4027](http://activities.sugarlabs.org/en-US/sugar/addon/4027).

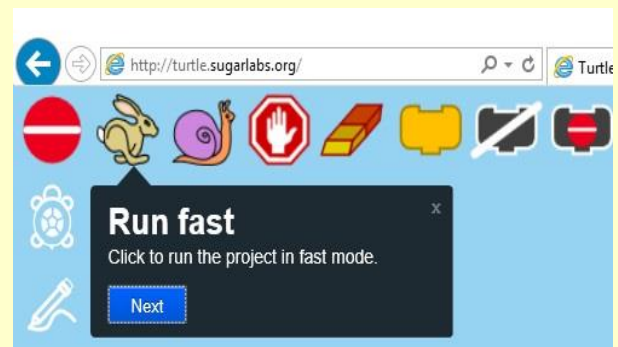
II. OVERVIEW OF THE ACTIVITY



PALETTE BUTTONS



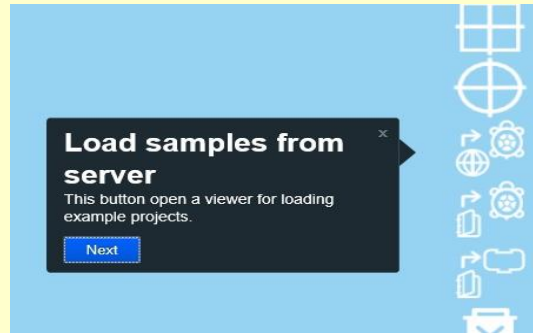
MAKING THE TURTLE MOVE FASTER



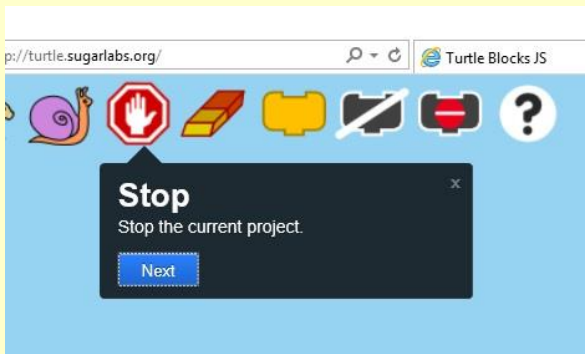
MAKING THE TURTLE MOVE SLOWER



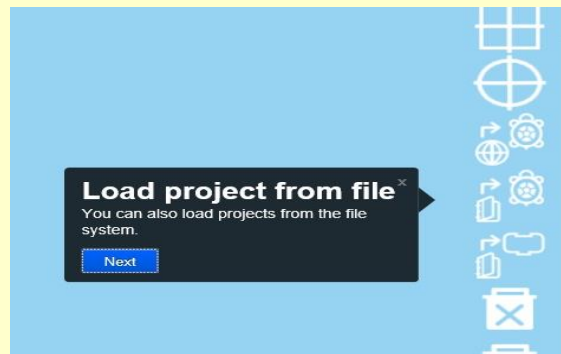
BRINGING SAMPLES FROM THE WEB



STOPPING PROJECT



BRINGING SAVED PROJECTS FROM DESKTOP



CLEARING SCREEN



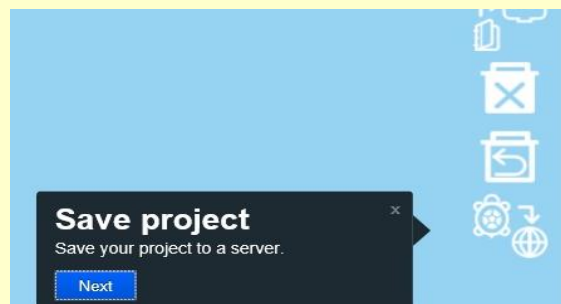
DELETING ONSCREEN PROJECTS



HIDING/SHOWING PALETTE



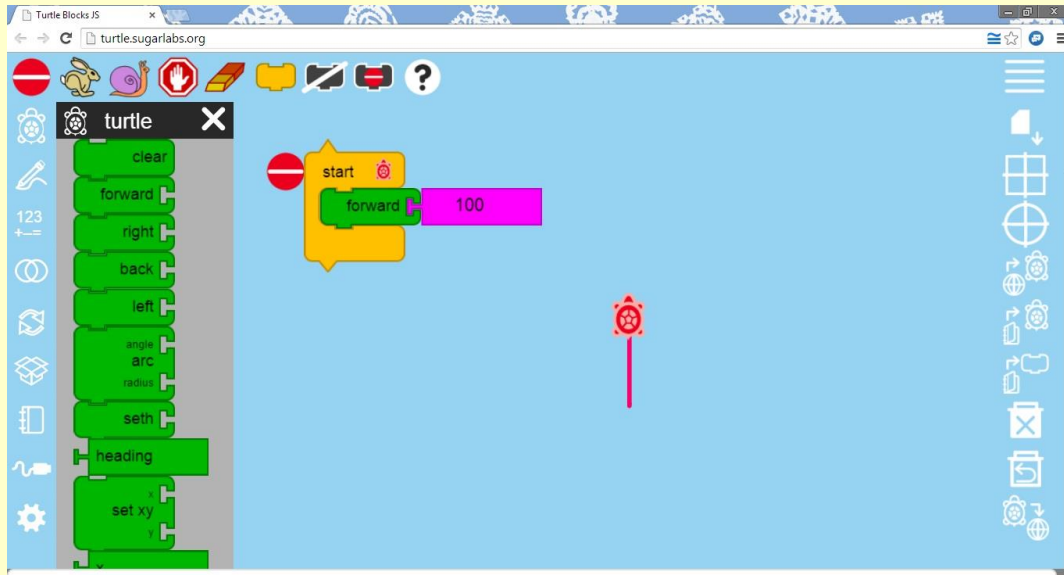
SAVING PROJECT



III. BASIC FUNCTIONS

A. FORWARD BLOCK

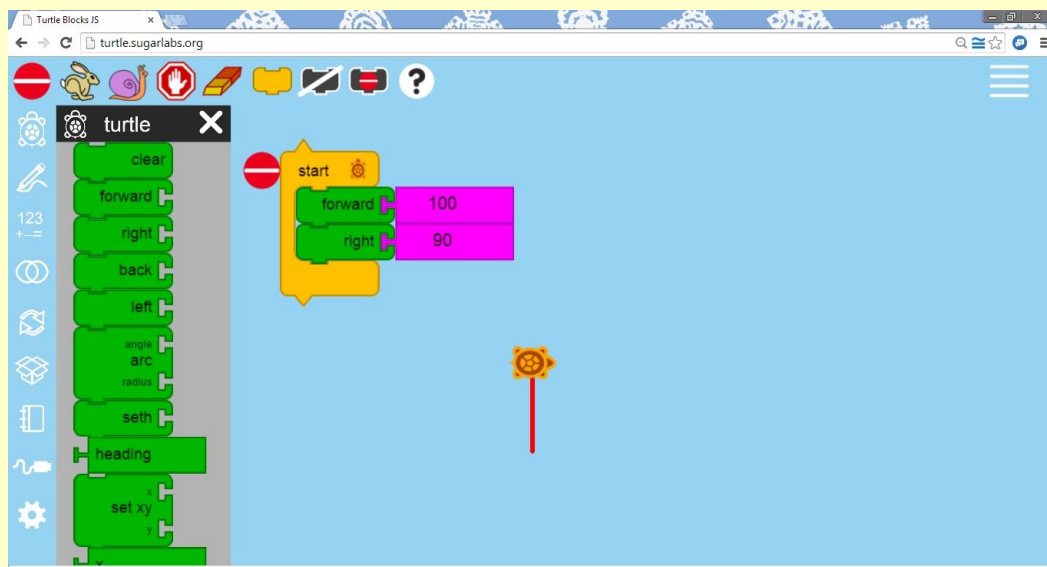
- ENABLES THE TURTLE TO MOVE FORWARD. THE VALUE YOU PLACE BESIDE THE TURTLE WILL BE THE DISTANCE IT WILL TRAVEL. IN THIS EXAMPLE, THE VALUE IS 100, THEREFORE, THE TURTLE MOVED 100 STEPS FORWARD.

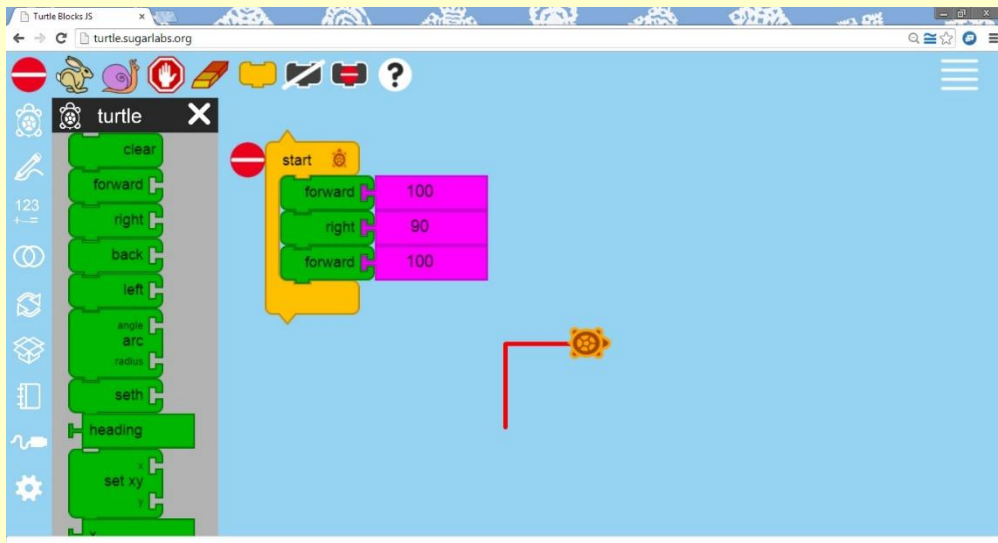


B. RIGHT BLOCK

- ALLOWS YOU TO ADJUST THE ANGLE OF WHERE THE TURTLE WILL FACE IN A CLOCKWISE PERSPECTIVE. THUS, IT WILL ADJUST THE DIRECTION OF THE TURTLE. IN THE FIRST GIVEN PHOTO, THE VALUE NEXT TO THE "RIGHT BLOCK" IS 90, THEREFORE, THE DIRECTION OF THE TURTLE SHIFTED TO 90°.

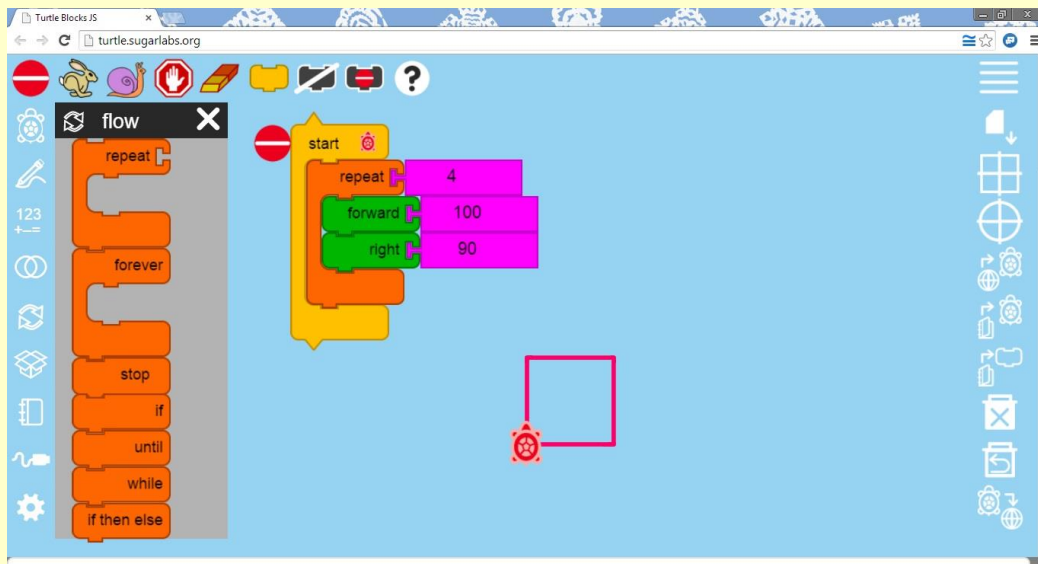
IN THE FOLLOWING PHOTO, THE "FORWARD BLOCK" WITH THE VALUE OF 100 WAS ADDED. THEREFORE, FROM 90°, THE TURTLE MOVED 100 STEPS FORWARD.





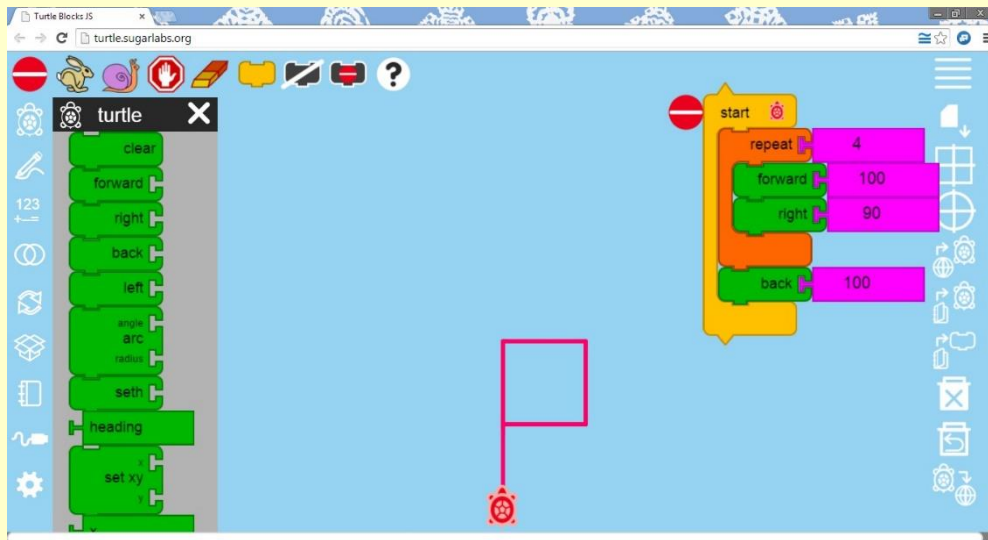
C. REPEAT BLOCK

- ➔ ENABLES YOU TO REPEAT STEPS. IN THE EXAMPLE, BELOW, THE VALUE OF REPEAT IS 4, THEREFORE, THE STEPS INDICATED (FORWARD - 100, RIGHT - 90) WAS REPEATED 4 TIMES, CREATING A SQUARE.



D. BACK BLOCK

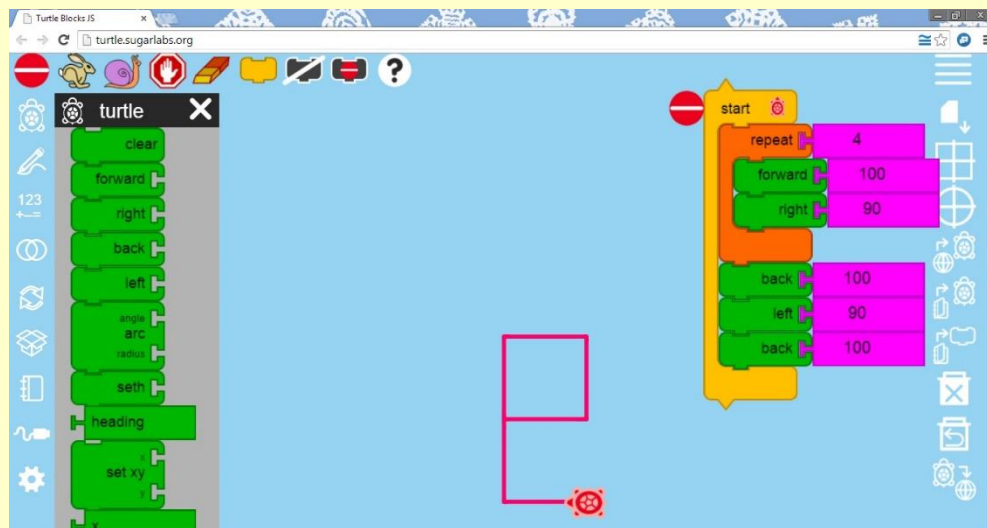
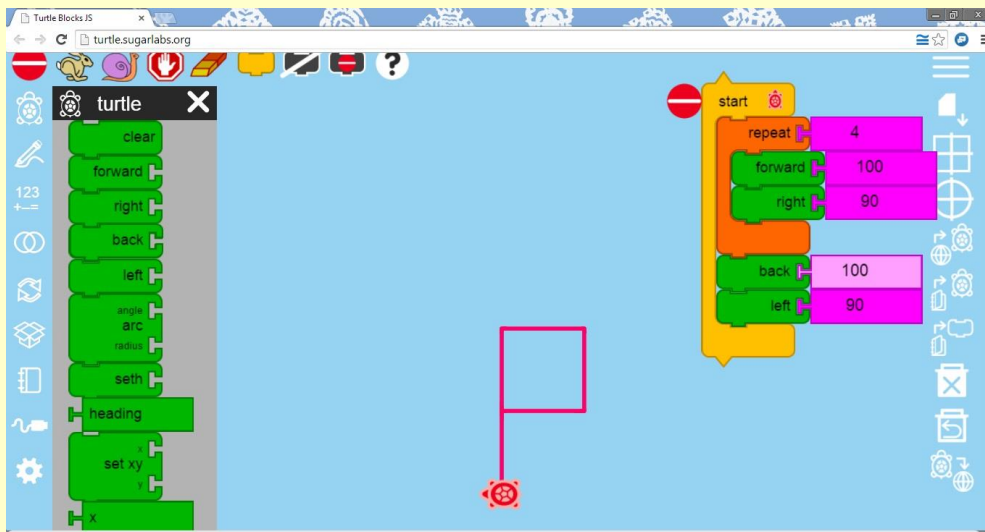
- ➔ IT BASICALLY HAS THE SAME FUNCTION WITH THE "FORWARD BLOCK", EXCEPT THAT IT MAKES THE TURTLE MOVE BACKWARDS. THE VALUE BESIDE THE BLOCK WILL INDICATE HOW MANY STEPS BACKWARD THE TURTLE WILL TAKE. IN THE EXAMPLE BELOW, THE VALUE IS 100, THEREFORE, THE TURTLE MOVED 100 STEPS BACKWARD FROM ITS LAST POSITION.



E. LEFT BLOCK

➔ IT BASICALLY HAS THE SAME FUNCTION WITH THE "RIGHT BLOCK" EXCEPT THAT IT ADJUSTS THE ANGLE IN A COUNTERCLOCKWISE PERSPECTIVE. IN THE EXAMPLE GIVEN BELOW, THE VALUE OF THE BLOCK IS 90. THEREFORE, THE ANGLE SHIFTED TO 90° .

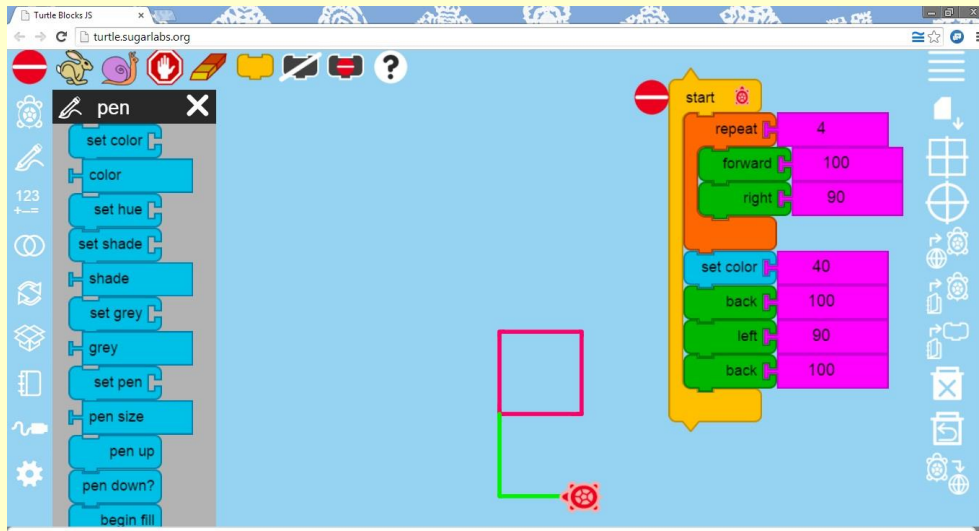
IN THE FOLLOWING EXAMPLE, ANOTHER "BACK BLOCK" WITH THE VALUE OF 100 WAS ADDED, WHICH MADE THE TURTLE MOVE 100 STEPS BACKWARD FROM THE 90° DIRECTION.



F. BASIC PEN TOOLS

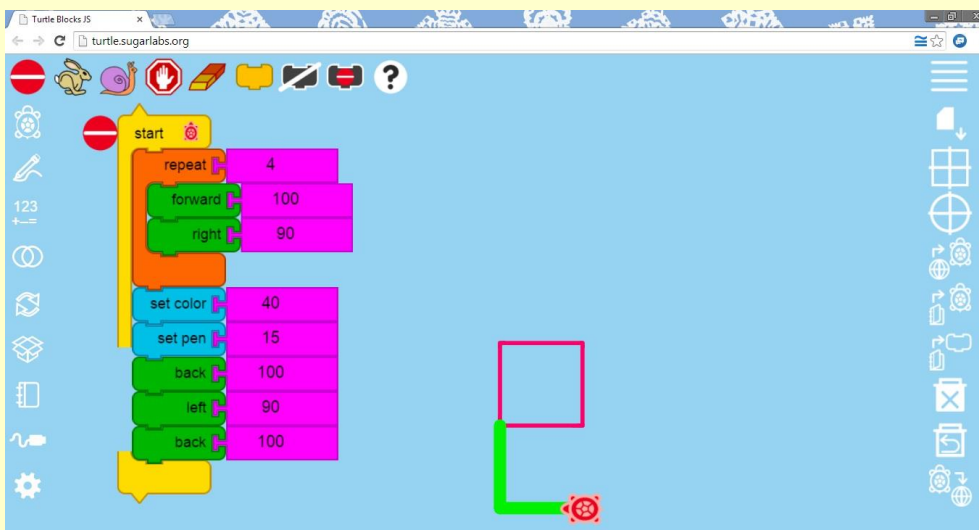
1. PEN COLOR: SET COLOR BLOCK

➔ ENABLES YOU TO CHANGE THE COLOR OF THE PEN. YOU CAN ALTER THE COLOR BY INPUTTING DIFFERENT VALUES BESIDE THE BLOCK. IN THE EXAMPLE BELOW, THE VALUE 40 GAVE THE PEN A LIGHT GREEN COLOR.



2. PEN SIZE: SET PEN BLOCK

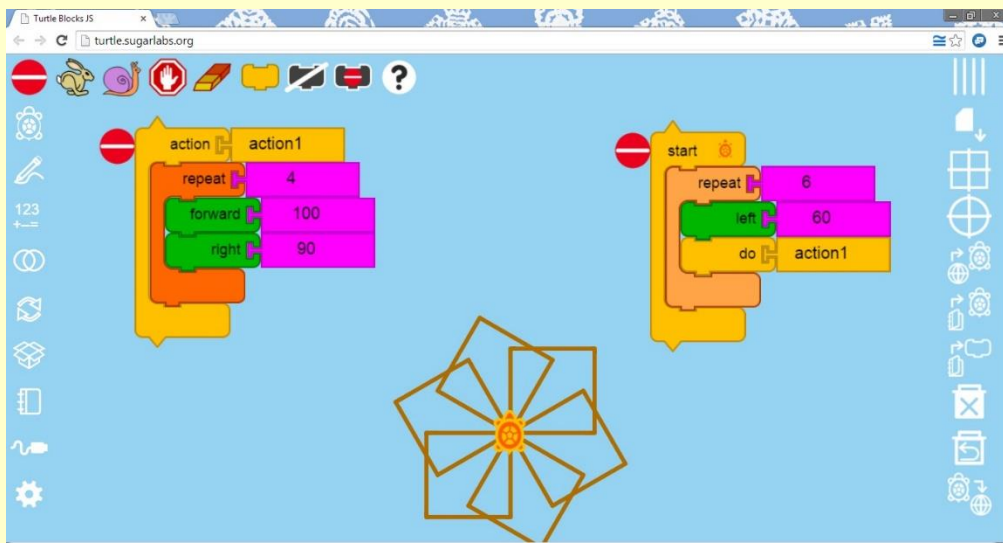
➔ ALLOWS YOU TO ALTER THE THICKNESS OF THE PEN. IN THE EXAMPLE BELOW, THE VALUE ADDED WAS 15, MAKING THE PEN THICKER THAN ITS ORIGINAL THICKNESS.



G. ACTION BLOCK

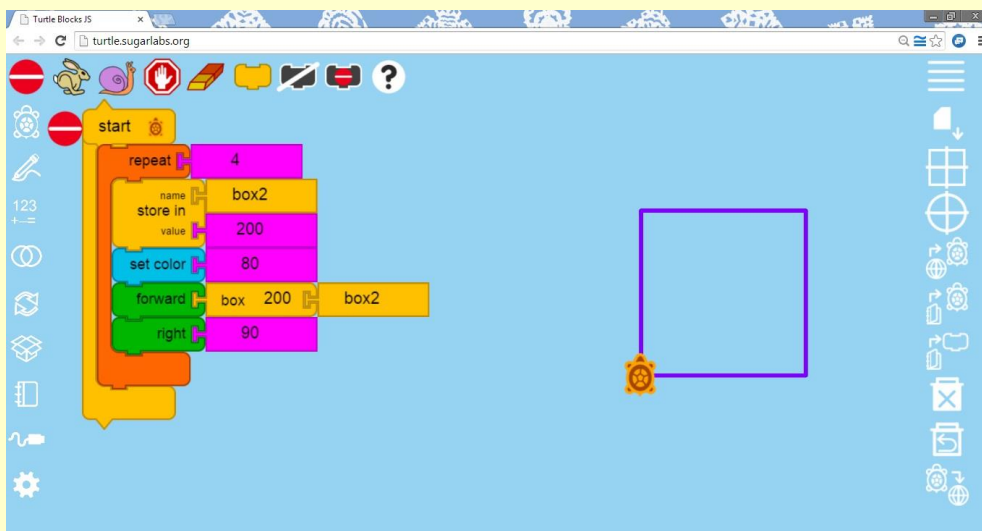
- ➔ ENABLES YOU TO REUSE THE ORIGINAL STACK OF BLOCKS. IN THE EXAMPLE BELOW, THE ACTION, NAMED "ACTION1" IS ORIGINALLY A SINGLE SQUARE. HOWEVER, WITH THE ACTION BUTTON, IT WAS ABLE TO REPEAT ITSELF FOR EVERY 60° FOR SIX TIMES.

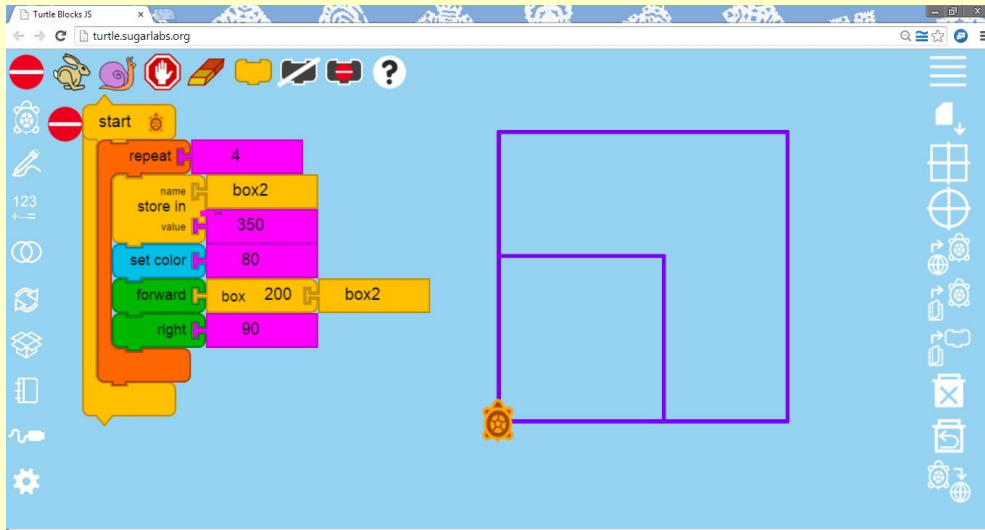
BASICALLY, THIS BLOCK ALLOWS YOU TO COMPLETE THE SAME PROCESS OF THE ORIGINAL STACK OF BLOCKS IN DIFFERENT ANGLES.



H. BOX BLOCK

- ➔ THIS BLOCK ENABLES YOU TO ADJUST THE AREA OF THE BOX. IN THE EXAMPLE BELOW, "BOX2" ORIGINALLY HAD THE AREA OF 200X200. WITH THE "BOX BLOCK" THE AREA WAS CHANGED TO 350X350. THEREFORE, THE AREA OF THE BOX WILL BE ALTERED DEPENDING ON THE VALUE YOU ASSIGN.

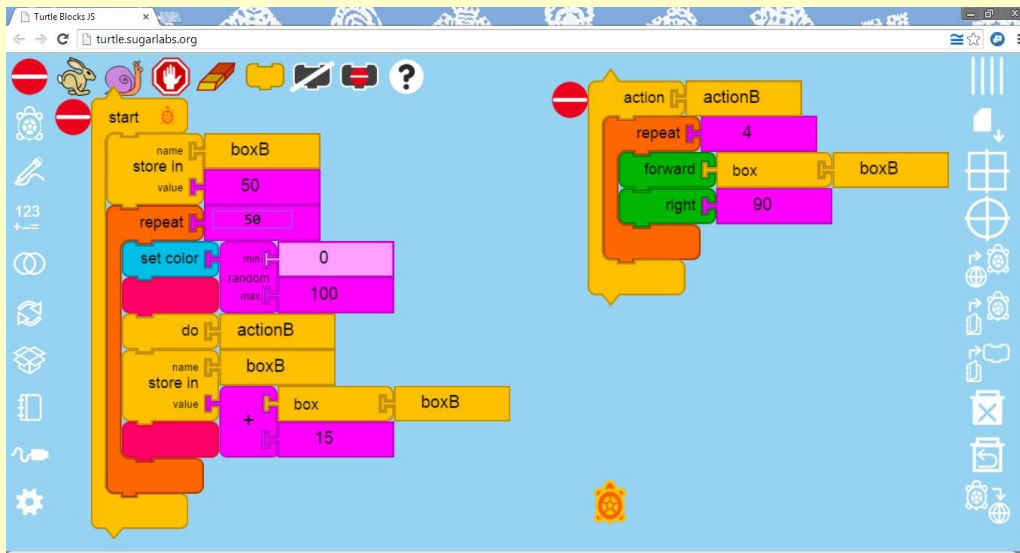


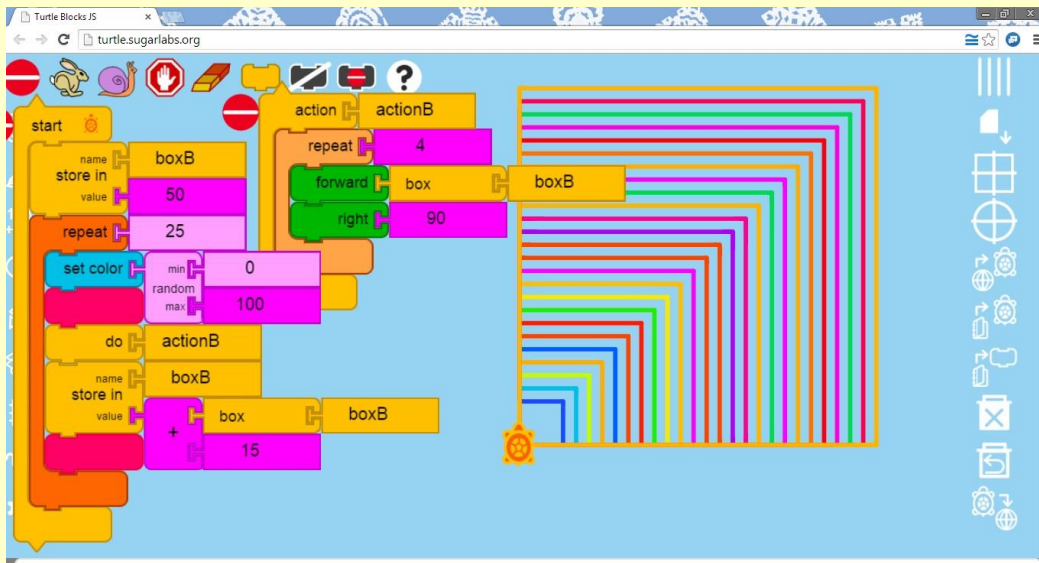


I. INCORPORATING THE BLOCKS DISCUSSED SO FAR

1. EXAMPLE A

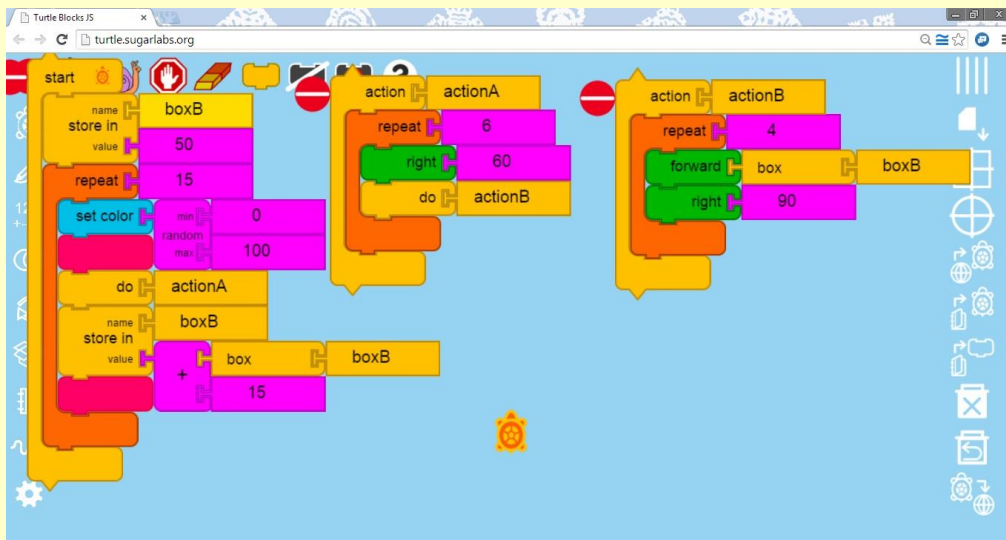
- ➔ "BOXB", WITH THE ORIGINAL AREA OF 50X50, WAS REPEATED 50 TIMES.
- ➔ FOR EVERY "REPEAT" PROCESS, THE LENGTH OF EACH SIDE OF THE BOX WAS INCREASED WITH THE VALUE OF 15.
- ➔ DIFFERENT RANDOM COLORS WITH THE RANGE FROM 0 TO 100 WAS SET, MAKING THE OVERALL PROJECT COLORFUL.

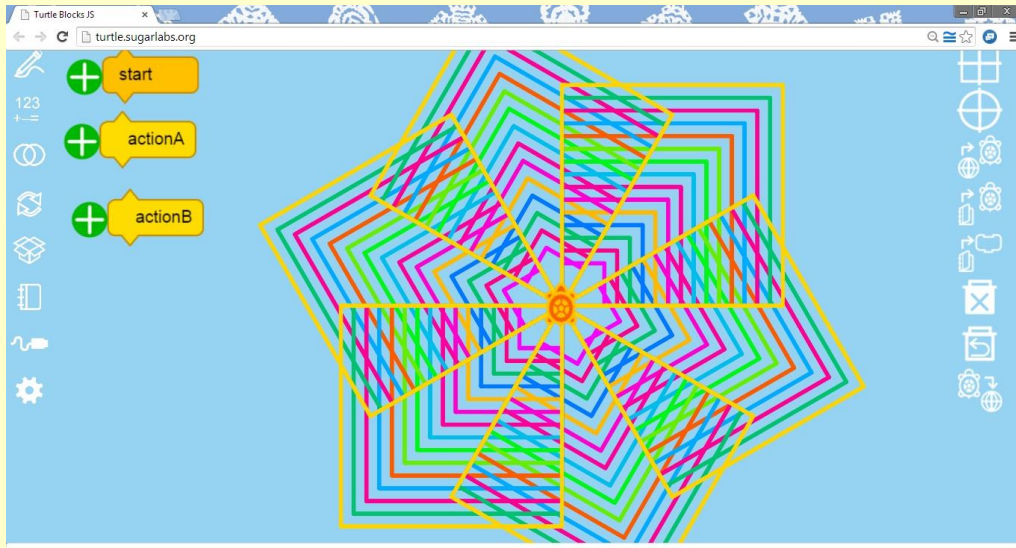




2. EXAMPLE B

→ FROM THE EXAMPLE GIVEN FOR THE "ACTION BLOCK", ALL THAT'S CHANGED IS THAT ADDITIONAL SQUARES WITH AN INCREASING SIZE AND RANDOM COLORS WERE MADE.

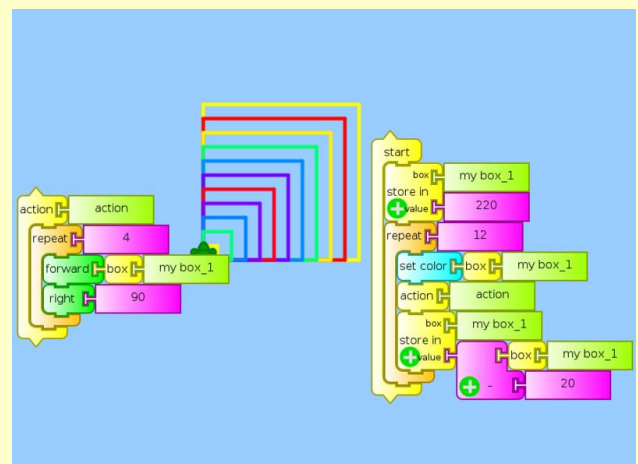
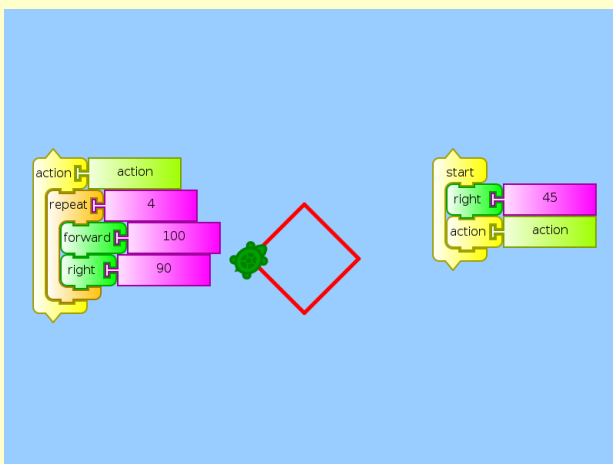


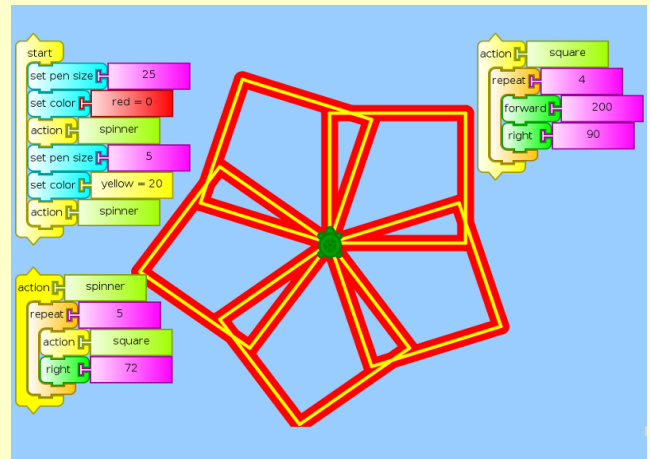
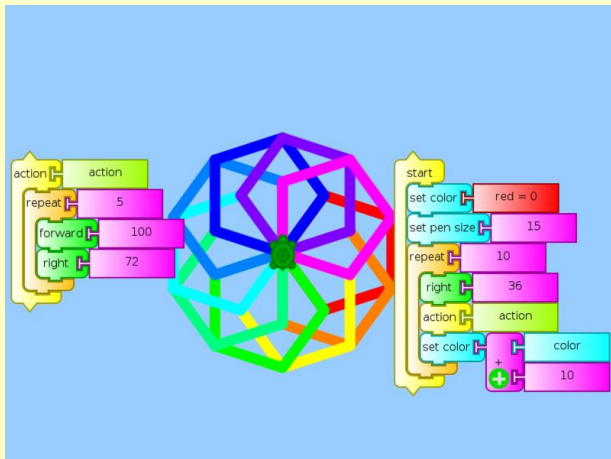
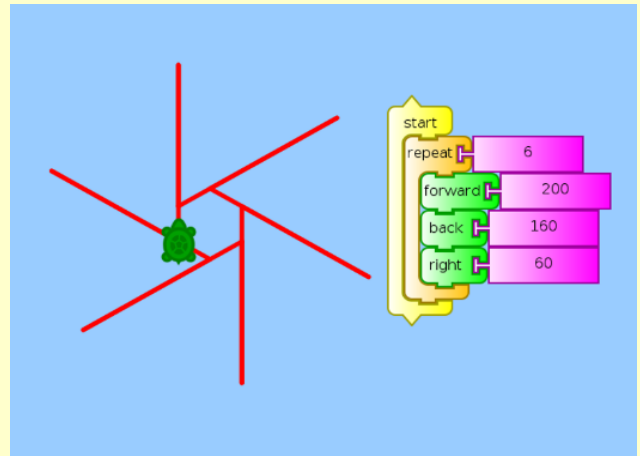
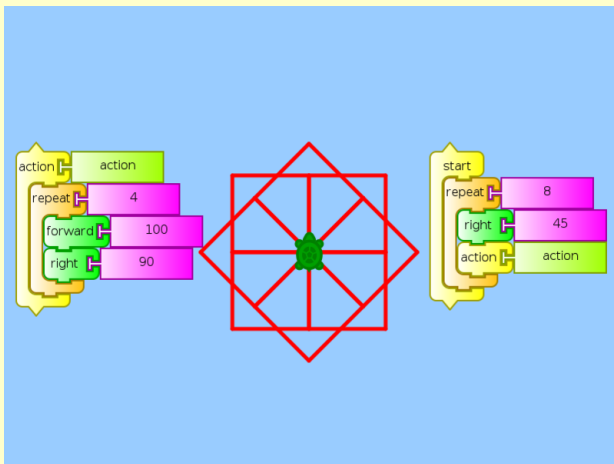


IV. SAMPLES FROM THE WIKI

[HTTP://WIKI.SUGARLABS.ORG/INDEX.PHP?TITLE=ACTIVITIES/TURTLE_ART/TURTLE_CARDS](http://wiki.sugarlabs.org/index.php?title=Activities/Turtle_Art/Turtle_Cards)

(COURTESY OF WALTER BENDER)





Note that this manual is simply an introduction to Turtle Blocks. You may discover several other fun blocks on your own, such as a camera, a microphone, etc.

Introductory information and sample pictures are retrieved from sugarlabs.org

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