BRBYTES:

https://www.brbytes.org/

A Research Partnership Between EBRPSS and LSU

Program Goals

1. **NSF Grant: to create 7th-11th computing Pathway and track student progress on it:**

- 7th grade: Intro to STEM Pathways & Careers*
- 8th grade: Survey of Computer Science
- 9th grade: Intro to Computational Thinking **
- 10th grade: Cyber Security *
- 11th grade: Data Manipulation & Analysis

*Universal Jumpstart 2.0 Course on ALL 15 Pathways
** Counts on all but 1 of the 15 Jumpstart 2.0 Paths

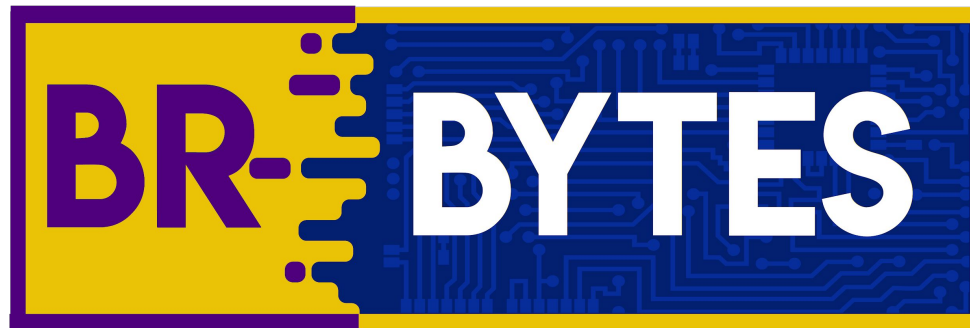# Baton Rouge:
Bringing Youth Technology, Education, and Success

Program Goals

2. EIR Grant: to assess the effectiveness of the 9th grade course Intro to Computational Thinking. ICT (9th or 10th grade):
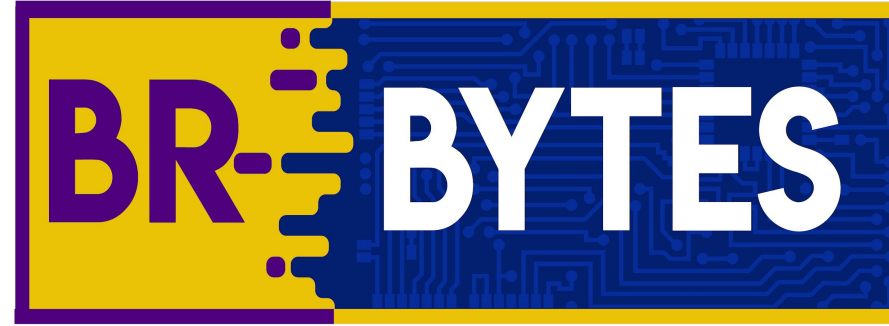
- is standards-aligned, hands-on, and project-based,
- teaches text-based programming
- **reinforces Algebra I and Geometry**.

We will compare the outcomes of students taking ICT and of students taking one other LSU Pathways course without programming on their LEAP 2025 Math Exams.

Program Goals

3. Both Grants: to increase access and reduce inequity in students' ability to take Computer Science
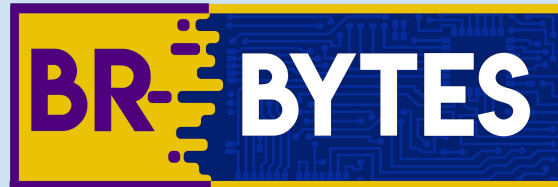
Attributes of a Computer Science Student:

- Creative mindset
- Team-oriented communicator
- Enjoyment of puzzles, problem solving, and being innovative
- Interest in business, art, music, science, healthcare, finance, entertainment, and of course computing
- Interest in a career with flexible hours and/or work locations
- Interested in a 2 or 4 year post high school degree/training
- **<u>Math Ability should not be a limiting factor</u>**. Many students excel in coding when they struggled in math because it is applied math with a purpose.

Which EBR schools are involved in 2020/2021?

Middle Schools

- Woodlawn Middle
- Mayfair Middle
- Westdale Middle
- Capitol Middle
- Southeast Middle
- Glen Oaks Middle
- Istrouma Middle
- Brookstown Middle
- Northeast Middle
- 3 More Middle Schools To Join in 2021/2022

High Schools

- Woodlawn High
- Mckinley Senior High
- Broadmoor Senior High
- Glen Oaks Senior High
- Istrouma High
- Scotlandville Magnet High
- Baton Rouge Magnet High
- Northeast High
- Belaire Magnet High
- Tara High
- Liberty High(Pilot Started Here)

EBR Computing Track Progression

7th Grade: Intro STEM Pathways & Careers

8th Grade: Survey of Computer Science

9th Grade: Introduction to Computational Thinking (ICT) **OR**

Option A
LSU
STEM
Pathway/
College

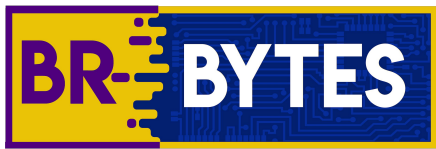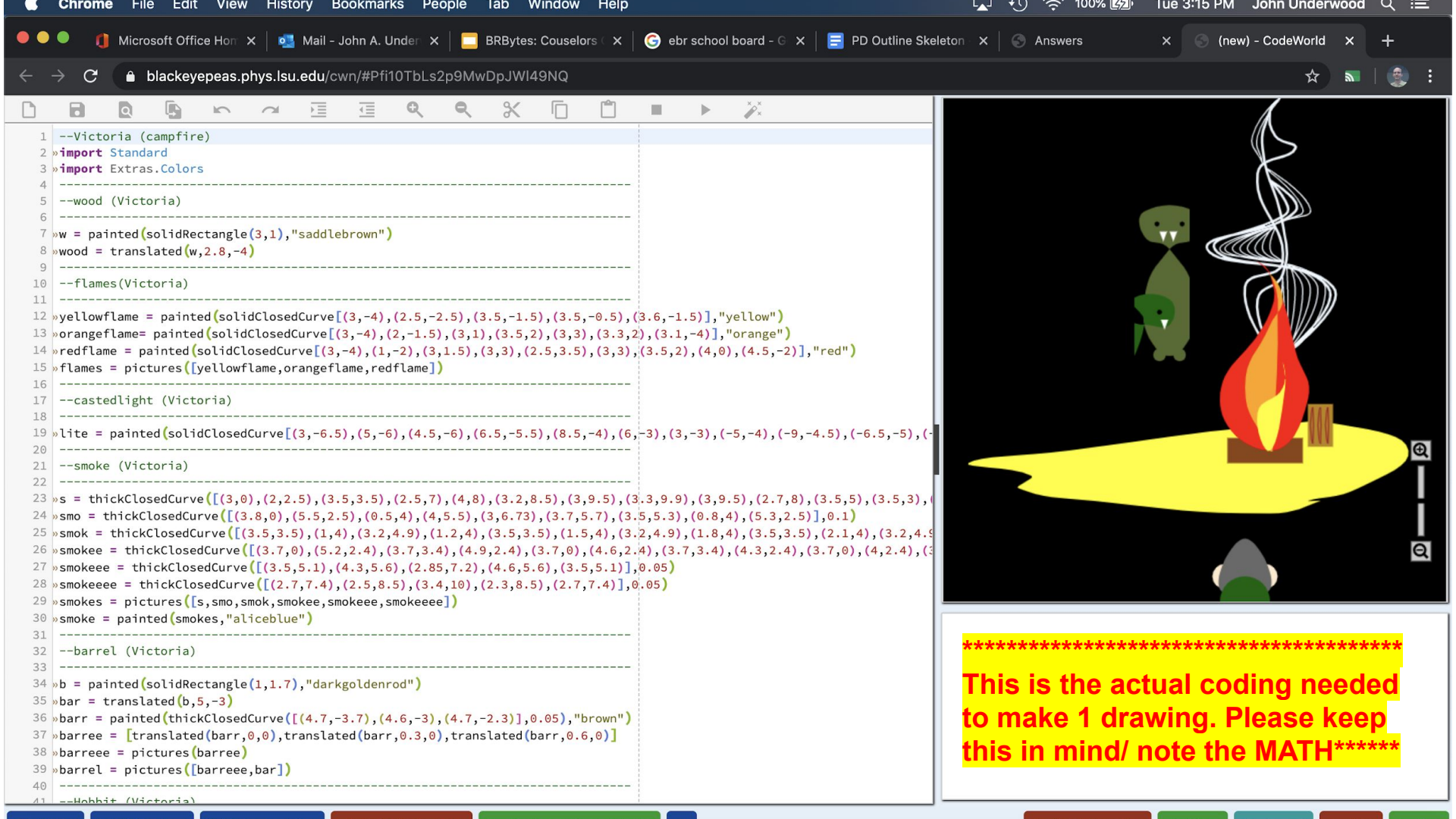Option B
EBR/ BRCC
Partnership
at
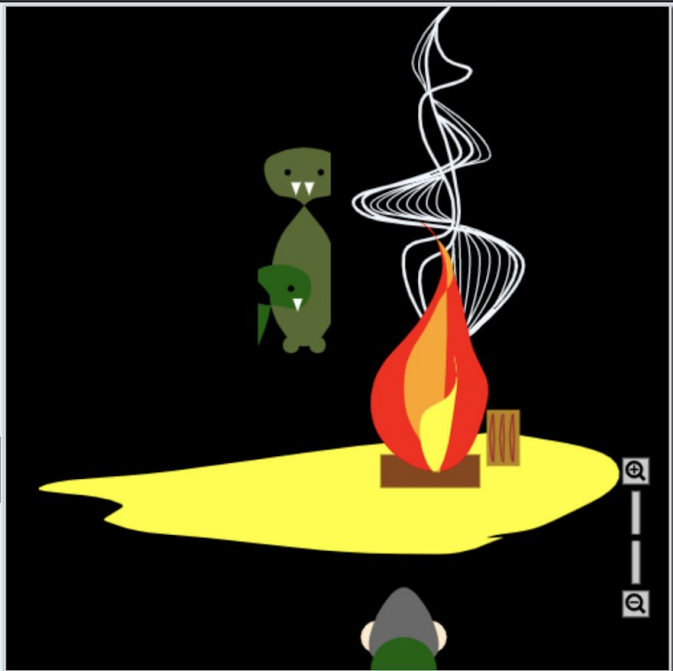CTEC

Option C
IBM
CY-Tech
TARA HIGH

Accomplishments/ Data as of December 2020

- **1,835 students** took a Computer Science Class in the Fall 2020 Semester
- **67%** are students from a **minority background**
- **47%** are students from an **economically disadvantaged background**
- 26 EBR teachers received stipends, professional support, and some earned graduate credit hours at no cost to them or the district
- Program recognition by US Assistant Secretary of Education Frank Brogan with an in person visit, Jan 2020.
- Dr. Underwood selected as 1 of 10 Computer Science Teachers Association Equity Fellows from across the nation.
- National publication of 3 research articles on the impact of the professional development, curriculum structure, and student impact.
- *The first school district in Louisiana to bring **ALL** students a chance to take Computer Science Classes in a 7-12 Pathway!*

Microsoft Office Hom × | Mail - John A. Under × | BRBytes: Couselors (× | ebr school board - G × | PD Outline Skeleton × | Answers × | (new) - CodeWorld × +

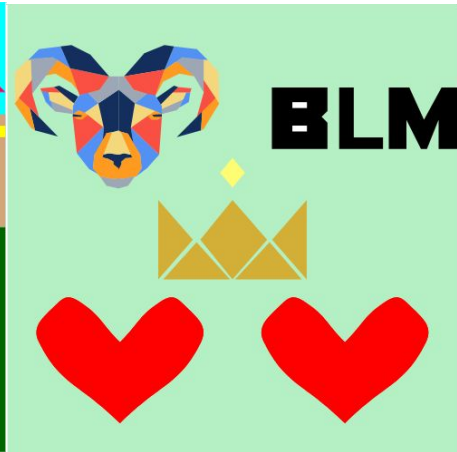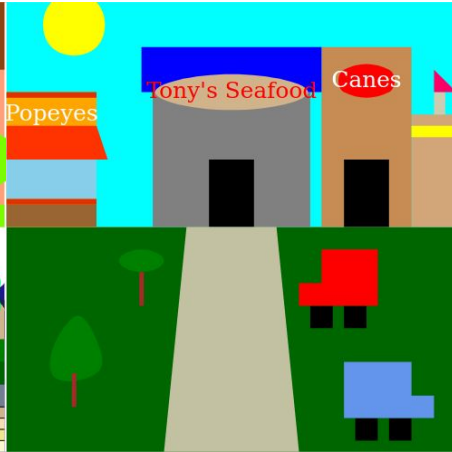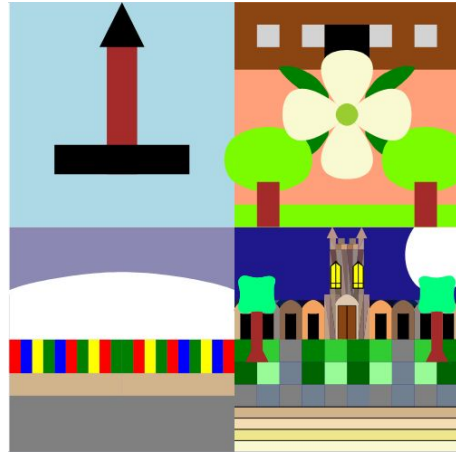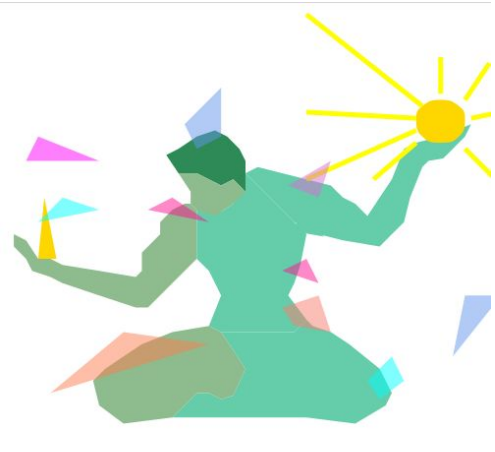← → C   🔒 blackeyepeas.phys.lsu.edu/cwn/#Pfi10TbLs2p9MwDpJWl49NQ   ☆ 📶 👤 ⋮

```
 1  --Victoria (campfire)
 2 »import Standard
 3 »import Extras.Colors
 4  --------------------------------------------------------------
 5  --wood (Victoria)
 6  --------------------------------------------------------------
 7 »w = painted(solidRectangle(3,1),"saddlebrown")
 8 »wood = translated(w,2.8,-4)
 9  --------------------------------------------------------------
10  --flames(Victoria)
11  --------------------------------------------------------------
12 »yellowflame = painted(solidClosedCurve[(3,-4),(2.5,-2.5),(3.5,-1.5),(3.5,-0.5),(3.6,-1.5)],"yellow")
13 »orangeflame= painted(solidClosedCurve[(3,-4),(2,-1.5),(3,1),(3.5,2),(3,3),(3.3,2),(3.1,-4)],"orange")
14 »redflame = painted(solidClosedCurve[(3,-4),(1,-2),(3,1.5),(3,3),(2.5,3.5),(3,3),(3.5,2),(4,0),(4.5,-2)],"red")
15 »flames = pictures([yellowflame,orangeflame,redflame])
16  --------------------------------------------------------------
17  --castedlight (Victoria)
18  --------------------------------------------------------------
19 »lite = painted(solidClosedCurve[(3,-6.5),(5,-6),(4.5,-6),(6.5,-5.5),(8.5,-4),(6,-3),(3,-3),(-5,-4),(-9,-4.5),(-6.5,-5),(-
20  --------------------------------------------------------------
21  --smoke (Victoria)
22  --------------------------------------------------------------
23 »s = thickClosedCurve([(3,0),(2,2.5),(3.5,3.5),(2.5,7),(4,8),(3.2,8.5),(3,9.5),(3.3,9.9),(3,9.5),(2.7,8),(3.5,5),(3.5,3),(
24 »smo = thickClosedCurve([(3.8,0),(5.5,2.5),(0.5,4),(4,5.5),(3,6.73),(3.7,5.7),(3.5,5.3),(0.8,4),(5.3,2.5)],0.1)
25 »smok = thickClosedCurve([(3.5,3.5),(1,4),(3.2,4.9),(1.2,4),(3.5,3.5),(1.5,4),(3.2,4.9),(1.8,4),(3.5,3.5),(2.1,4),(3.2,4.9
26 »smokee = thickClosedCurve([(3.7,0),(5.2,2.4),(3.7,3.4),(4.9,2.4),(3.7,0),(4.6,2.4),(3.7,3.4),(4.3,2.4),(3.7,0),(4,2.4),(3
27 »smokeee = thickClosedCurve([(3.5,5.1),(4.3,5.6),(2.85,7.2),(4.6,5.6),(3.5,5.1)],0.05)
28 »smokeeee = thickClosedCurve([(2.7,7.4),(2.5,8.5),(3.4,10),(2.3,8.5),(2.7,7.4)],0.05)
29 »smokes = pictures([s,smo,smok,smokee,smokeee,smokeeee])
30 »smoke = painted(smokes,"aliceblue")
31  --------------------------------------------------------------
32  --barrel (Victoria)
33  --------------------------------------------------------------
34 »b = painted(solidRectangle(1,1.7),"darkgoldenrod")
35 »bar = translated(b,5,-3)
36 »barr = painted(thickClosedCurve([(4.7,-3.7),(4.6,-3),(4.7,-2.3)],0.05),"brown")
37 »barree = [translated(barr,0,0),translated(barr,0.3,0),translated(barr,0.6,0)]
38 »barreee = pictures(barree)
39 »barrel = pictures([barreee,bar])
40  --------------------------------------------------------------
41  --Hobbit (Victoria)
```

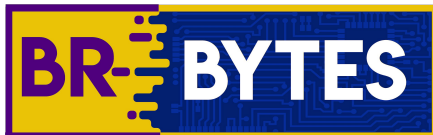***
This is the actual coding needed to make 1 drawing. Please keep this in mind/ note the MATH*****

Student Work Fall 2020

BR-BYTES

Our 2020/2021 Amazing Teachers!

Zaveola Banguel

Laura Efferson

Elsie Esteba

Michelle Foster

Stephen Fraizer

Eymel Gant

Lori Gaubert

Cynthia Gonzales

Jocelyn Guiterrez-Hudson

Terrie Hasten Fleming

Brittany Jackson

Shehla Khan

Brandon Landry

Maura Lewis

Gerraca Matthews

Brandon McQuirter

Dr. Marilou Ner

Victoria Palamone
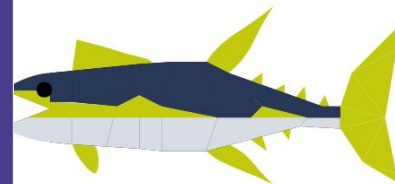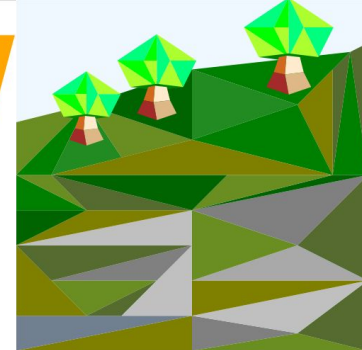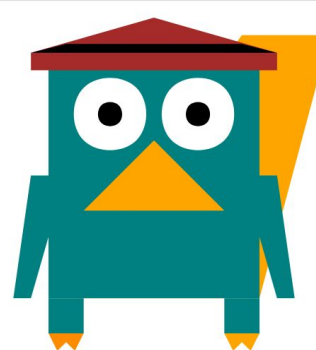
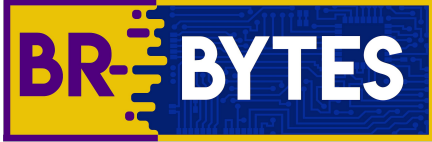David Ray

Charles Scarbrough

LaShandra Seymour

Michelle Walker

Tammy Washington

Jennifer Whitesell

Kirshawn Williams

Jaquincia Williams

BR-BYTES Team:

PIs:

- Dr. Juana Moreno (LSU)
- Ben Necaise (EBRPSS)

CoPIs:

- Fernando Alegre (LSU)
- Dr. April Yu Chen (LSU)
- Summer Dann (EBRPSS)
- Dr. David Kirshner (LSU)
- Dr. Lori Martin (LSU)
- Susanne Navo (EBRPSS)
- Dr. Frank Neubrander (LSU)
- Andrea O'Konski (EBRPSS)
- Dr. Sharmayne Rutledge (EBRPSS)
- Dr. John Underwood (EBRPSS)