



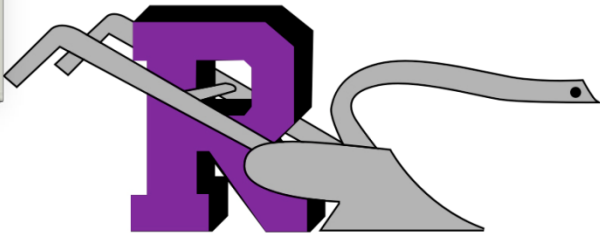
# Roscoe Collegiate HS: A Tried and True Model for Rural ECHS

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# Roscoe Collegiate ISD



# Why Change Now?

*“The world is becoming increasingly complex.”*

(Shinn, Texas A&M University, 2004)

*“Things that do not change, tend to stay the same.”*

(Shinn, Texas A&M University, 2014)

# Changing Face of Roscoe

## Economically Disadvantaged Demographic Trend:

- 30% in 1990
- 70% in 2010
- **90% by 2015** (*projected*)

Addressing the poverty issue became Priority # 1

# Understanding Poverty

*“Impoverished students come to school lacking many of the same **cognitive structures** that most non-poverty students possess.”*

(Wagner, Harvard GSE, 2009)

*“Results from extensive research support the premise that by age 4 children from affluent families have heard over 400 million more **vocabulary words** than children from impoverished homes.”*

(Raymond Paredes, Commissioner of Higher Education, 2010)



# The Rural Dilemma

*“There are 834,000 rural K-12 students in Texas, which is almost 10% of the total K-12 enrollment.”*

*“Approximately 43% of the rural K-12 student population is considered low income.”*

*“Only 20% of the 2012 high school graduating class in Texas will end up earning any kind of postsecondary credential.”*

(The Bush School of Government & Public Service, Texas A&M University, 2014)

# Regional Education Data

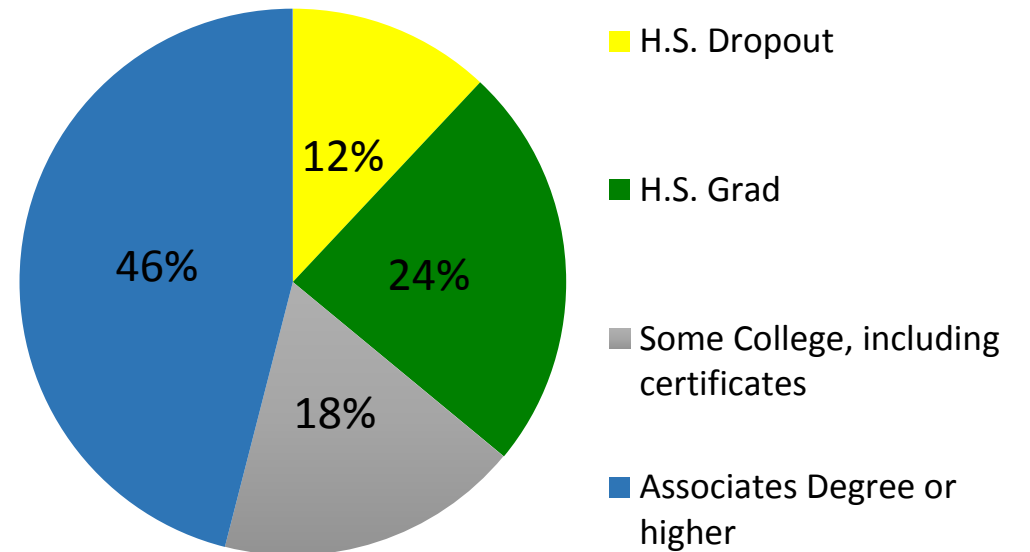
## Abilene Regional P-16 Council

### College-going rate

### Region 14 graduates

- Decreased from 54% to 49% from 2005 to 2011
- 30% of those did not return sophomore year of college
- By 2020 in Texas, 59% of jobs will require postsecondary training

US Workforce Projections  
Required Education Level by 2020



# The Real Texas Dropout Rate

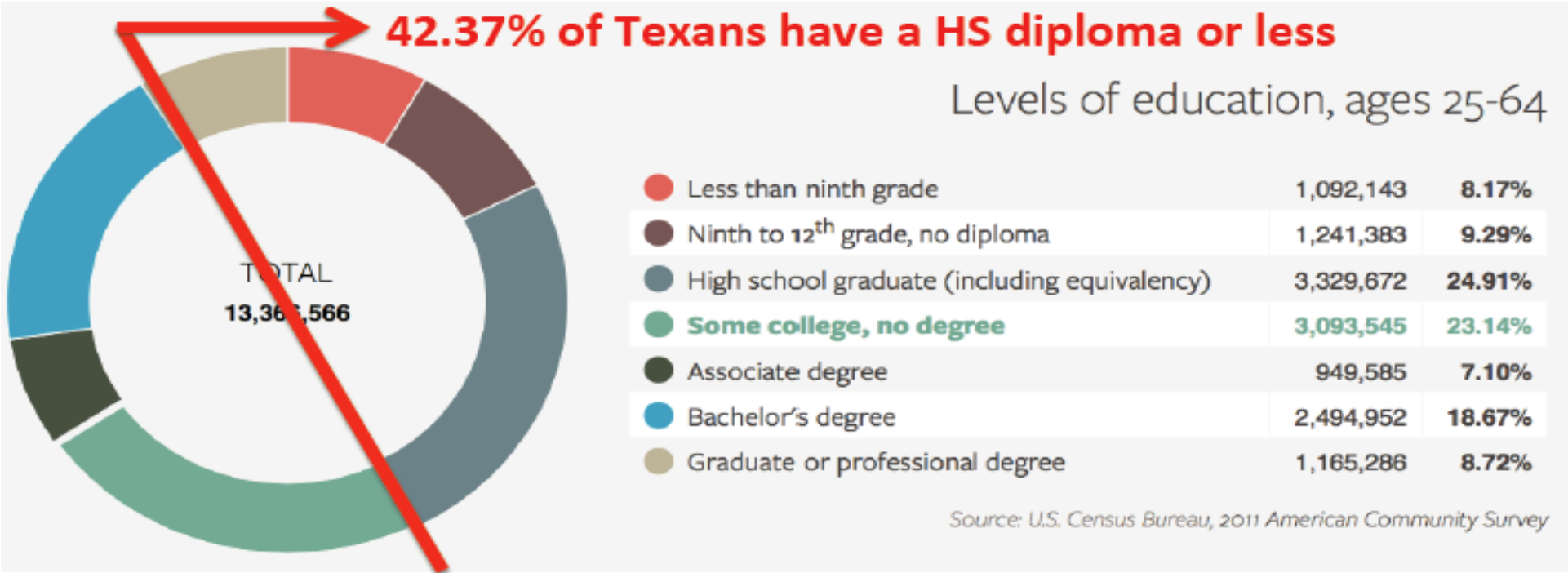
% GRADE 9 WHO...	TEXAS	UNITED STATES
Graduate High School	64%	69%
Enter College	35%	42%
Enroll Sophomore Year	23%	28%
Graduate 150% On Time	14%	20%

*“Fewer than 1% of high school graduates, who lay out of college one year after graduation from high school, complete a four-year degree within six years.”*

(Institute for Demographic and Socioeconomic Research, 2009)



## EDUCATION LEVEL OF TEXAS LABOR FORCE



34.49% of Texan adults hold a postsecondary degree  
 23.14% of Texan adults have some college, no degree

Source: Lumina Foundation (2013) [http://www.luminafoundation.org/stronger\\_nation\\_2013/#texas](http://www.luminafoundation.org/stronger_nation_2013/#texas)

## 2020 EMPLOYMENT PROJECTIONS

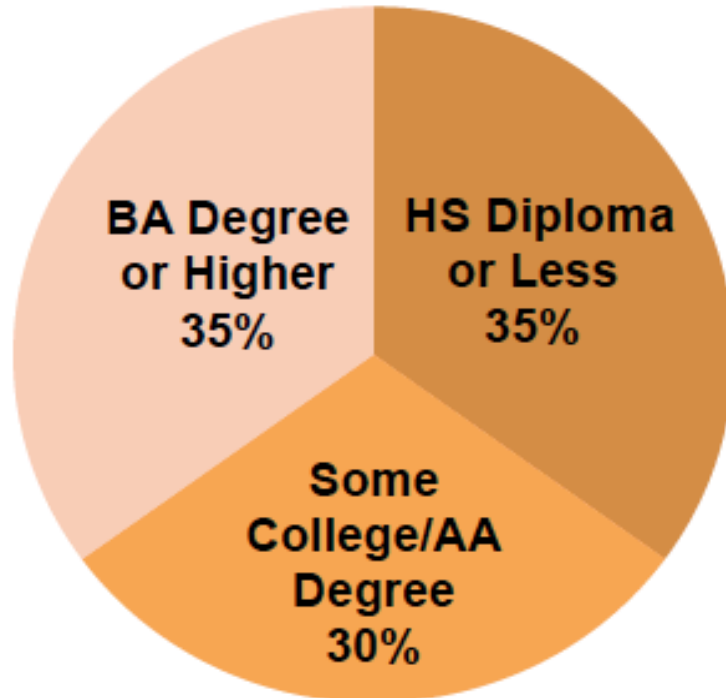
For a strong economy, the skills gap must be closed.

### TEXAS:

- 60%** By 2020, jobs requiring a career certificate or college degree
- 31%** Texas adults who currently have an associate degree or higher
- 29%** Skills gap

Data: See the Sources and Methodology section on our website.

### Nationwide:



Sources: *Recovery 2020*, Georgetown Center on Education and the Workforce (2013); and Complete College America (2011), <http://completecollege.org/wp-content/themes/cca/pdfs/Texas.pdf>

# Economics of Education

## EFFECTS ON TEXAS ECONOMY IF CURRENT TRENDS CONTINUE

- **12%** decline in average household income
- **15%** increase in number of households living in poverty
- **\$15 billion** per year less in state tax revenue
- An increase of **100,000** in the prison population
- An additional **\$1.5 billion** in incarceration costs

(Institute for Demographic and Socioeconomic Research, 2009)

# Economics of Education

## EDUCATION = REVENUE SOURCE (NOT EXPENSE)

- **133,200** dropouts in Texas
- **\$34.6 billion** lost wages and productivity in one class
- **\$1.6 billion** in medical care
- **\$691 million per year savings** from a 5% reduction in male dropout rate  
(Alliance for Excellent Education, 2009, [www.all4ed.org](http://www.all4ed.org))
- Economic impact of quality teaching is much greater than previously thought –  
more than **\$700,000** per child in lifetime earnings  
(The New York Times, January 6, 2012)

# Solutions

- ✓ Early College
- ✓ AVID
- ✓ Common Instructional Framework
- ✓ Instructional Coaches, Common Planning, Teacher Observations
- ✓ Instructional Rounds
- ✓ The Third 90
- ✓ Project-Based Learning (T-STEM)

# A Blended Model

## EARLY COLLEGE HIGH SCHOOL

*“Early College High School is a bold approach, based on the principle that **academic rigor**, combined with the opportunity **to save time and money**, is a powerful motivator for students to work hard and meet serious intellectual challenges. Early college high schools blend high school and college in a rigorous yet supportive program, compressing the time it takes to complete a high school diploma and a college degree.”*

(Early College High School Initiative, 2006)

# Roscoe Collegiate Enrollment

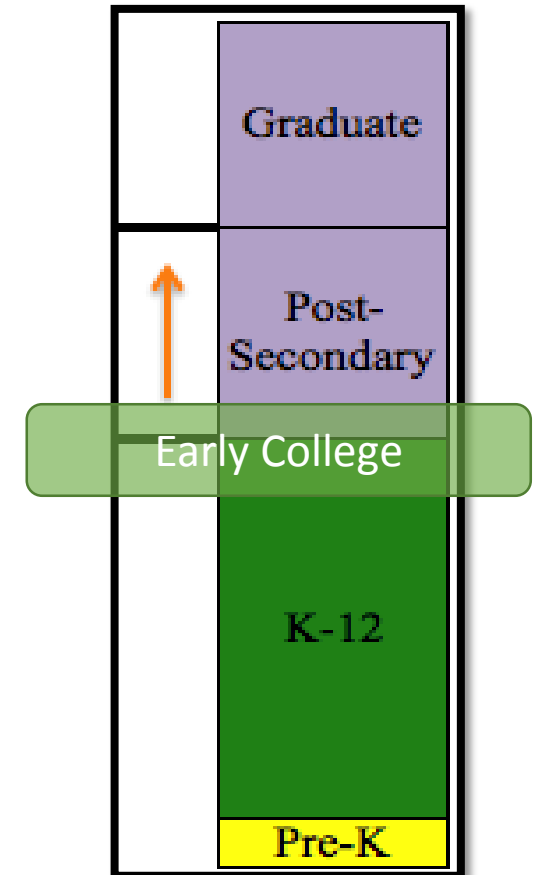
## Dual Credit Comparison

	Fall 2013	Spring 2014	Fall 2014	Spring 2015
Dual Students	102	100	111	105
Dual Courses	279	237	306	235
Dual Hours	866	773	970	757
Total Students Enrolled	111	112	115	112

# Early College Impact

- Early College students are significantly more likely to **graduate** from high school than comparison students.
- Early College students are significantly more likely to **enroll in college** than comparison students.
- Early College students are significantly more likely to **earn a college degree** than comparison students.

(American Institute for Research, 2013)





# Educational Relevance

## COMMON INSTRUCTIONAL FRAMEWORK

*A 'Best Practice' Common Instructional Framework promotes **six instructional strategies** that prepare ALL students for 21<sup>st</sup> Century colleges, careers, and workforce readiness.*

(Texas High School Project, 2007)

# High Cognition Facilitation

## THE COMMON INSTRUCTIONAL FRAMEWORK (CIF)

- 1. Collaborative group work*
- 2. Writing to learn*
- 3. Questioning*
- 4. Scaffolding*
- 5. Classroom talk*
- 6. Literacy groups*

(UPCS Institute, 2003)



[www.wisegeek.com](http://www.wisegeek.com)

# What are Students Doing?

## THE HARVARD INSTRUCTIONAL ROUNDS METHOD

Designed to assess the degree of implementation of the CIF horizontally across the curriculum and vertically throughout the grade levels (what students are actually doing in class).

*“The Rounds process is an explicit **Practice** that is designed to bring discussions of instruction directly into the process of school improvement. By Practice, we mean something quite specific. We mean **a set of protocols and processes for observing, analyzing, discussing, and understanding instruction** that can be used to improve student learning at scale. The Practice works because it creates a common discipline and focus among practitioners with a common purpose and set of problems.”*

(City et al., Harvard GSE, 2009)

# Going the Extra Mile

A College Readiness Program that places a premium on Writing, Inquiry, Collaboration, and Reading (WICR) to develop responsible college students, a critical component of Early College Success!

A*dvancement*

V*ia*

I*ndividual*

D*etermination*



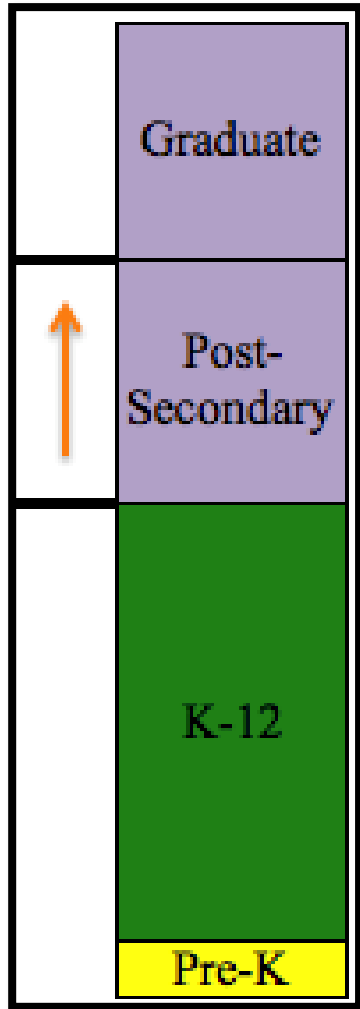
**AVID**

# Rigor Without Relevance

*“Rigor without relevance is not sustainable.”*

(Daggett, 2008)

# P-20 Anyone?



*“A high school diploma is no longer a reliable ticket to a decent living. In an era of computers and instant access to information, problem solving, teamwork, and communication skills are essential for personal and national success.”*

(City, Elmore, Fiarman, and Leitel, Harvard GSE)

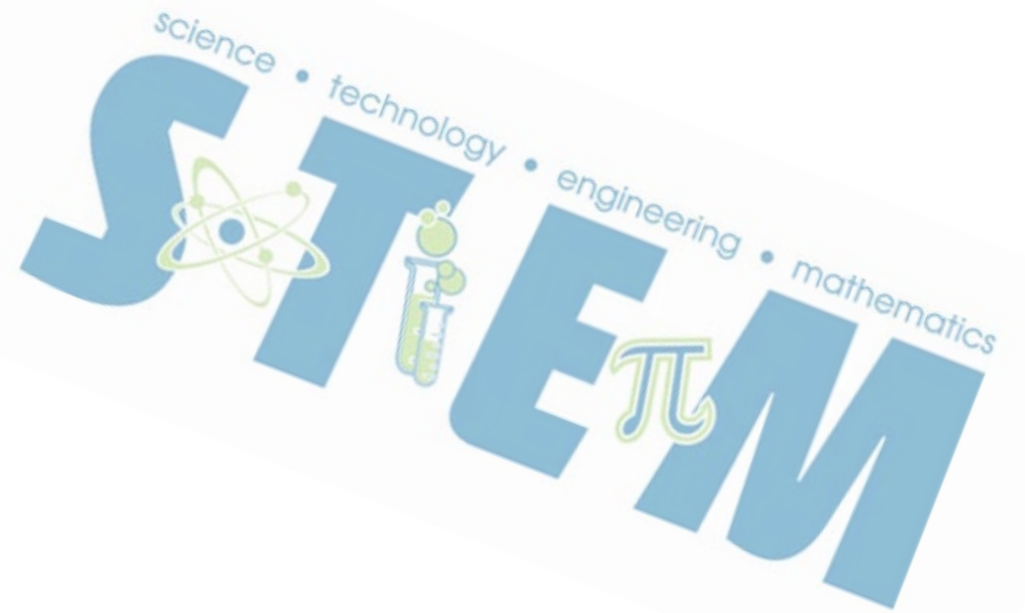
# What is STEM?

**S** = Science

**T** = Technology

**E** = Engineering

**M** = Mathematics



# Why STEM Education?

*“Texas is in a **crisis** today. We don’t have the skilled workforce to fill even half the STEM related jobs that exist today. Texas won’t continue to be the great state that we are, if we fail to address this issue right now.”*

(Dan Branch, Texas House of Representatives, November, 2012)



# STEM OPPORTUNITIES IN TEXAS

## STEM SKILLS ARE IN DEMAND

In Texas, STEM skills have stayed in demand even through the economic downturn.

**STEM:**  
**2.5 jobs** for every  
**1 unemployed person**



**Non-STEM:**  
**3.3 unemployed people** for every **1 job**



# Agricultural Workforce Data

## **AmericasFarmers.com**

- Agriculture employs 23 million people,  
17% of US workforce
- 54,400 annual openings for people with baccalaureate or higher degrees in  
food, renewable energy, and environmental  
between 2010 and 2015

# RGHS/WTC STEM Pathways

## Track 1: Biomedical Science

- **Clinical:** pre-professional animal & human health
- **One Health:** animal & human global health, food safety, disease control
- **Laboratory:** animal, human & plant biotechnology research
- **Business:** animal & human health care administration

## Track 2: Engineering

- **Research & Design:** computer engineering & product design
- **Application:** mechanical engineering
- **Business:** marketing and sales

# Support Structures: STEM Models

## State Model

- Temple BioScience Institute, Temple, TX
- Located on Scott and White Hospital's West Campus
- Focus on science, biotechnology, research, and medical fields
- Students engaged in real-world, project-based curriculum

## National Model

- Blue Valley Schools Center for Advanced Professional Studies, Overland Park, KS
- Students paired with mentors to learn problem solving, time and project management, business ethics, and self-discipline
- Focus on bioscience, business, engineering, and human services
- Profession-based learning approach

# Support Structures: Partnerships

Western Texas College

Angelo State University

Texas A&M University

Texas Tech University

INOVA

Monsanto

Texas A&M Agrilife Extension

Texas A&M Agrilife Research

Roscoe City Government

Collegiate Chiropractic & Wellness Center

Texas Tech T-STEM Center

Educate Texas

# Apprentice Opportunities

- A **challenge for rural settings** - providing lab based, real world apprenticeship experiences!
- The **Veterinary Science Certificate Program** is an endorsement program (500 + hour apprenticeship) that is already in place in high schools across Texas and the United States, which has the potential to satisfy career path preparation for agriculture, business, education, health care, research, and technology.
- The **Engineering Certificate Program** is an endorsement program (500+ hour apprenticeship) that is currently under development that will have the potential to satisfy career path preparation for agriculture, architecture, business, construction, education, engineering, research, and technology.

# Multiple Measures of Accountability

## College and Workforce Ready Students

90% of students will:

- Earn an **Associate Degree**
- Earn **STEM Endorsement**  
(Biomedical or Engineering)

All students will:

- Conduct collaborative **research** and develop a capstone poster using the research process
- Develop an **evidence-based portfolio** with research conclusions and a rubric of measurable gains

# Multiple Measures of Accountability

**TEXAS A&M AGRILIFE EXTENSION**

## Do Crickets Like Dark Or Light

A. Hermosillo, M. Herrera, M. Humphreys, J. Skalecky, R. Villa.

### Abstract

The purpose of this experiment was to see if the crickets liked light or dark. When we first started our project, before research or experimentation, our group hypothesized that crickets liked dark better than light. First, we put five crickets in our group's box, then, we turned off the lights for two minutes and turned on the lights for two minutes. Right after that, we counted how many crickets were on each side, light and dark. We charted our numbers on our graph to collect our data. Our results showed that crickets definitely prefer dark over light. Our conclusion showed that our hypothesis was right. Crickets do prefer dark over light according to our data and research.

### Information

CRICKETS LIVE IN TALL GRASS, DARK PLACES, IN THE WILD, UNDER ROCKS, AND IN HERRIS. CRICKETS RUB THEIR WINGS TOGETHER TO CHIRP. ONLY THE MALE CRICKETS CAN CHIRP. WHEN THE TEMPERATURE IS HIGHER, THE MORE CHIRPS YOU HEAR. A MINUTE A CRICKET GENERATES THERE ARE TWO REASONS WHY CRICKETS CHIRP, AND THEY CHIRP, AND THEY CHIRP TO AGGRESSIVELY ENCOUNTER EACH OTHER AND WHEN THE CRICKETS IS SENSING DANGER. CRICKETS LOOK FLAT, SOME LOOK LIKE THEY ARE BROWN WITH WHITISH WINGS, AND SOME ARE BROWN AND BLACK. THEY EAT FRUIT, SEEDS, SHEDS, SNAIL INSECTS, LEAVES, AND THEY MIBBLE ON LARGE OR SNAIL SOMNAGES. MALES CAN CHIRP AND FEMALES CAN NOT CHIRP AT ALL.

### Materials and Method

#### Materials

- TAPE
- BOXES
- CRICKETS
- POTATO
- A NET
- DARK
- CONSTRUCTION PAPER
- LIGHT
- DARK
- GRAPH
- LAPTOPS

#### Methods

1. WE MADE BOXES OUT OF NET AND BLACK PAPER. WE ADDED THE NET ON THE BOX.
2. WE ADDED FIVE CRICKETS AND CLOSED THE BOX.
3. TURNED OFF THE LIGHTS AND WAITED TWO MINUTES.
4. WE TURNED ON THE LIGHTS AND WAITED TWO MORE MINUTES.
5. COUNT THE CRICKETS ON EACH SIDE.



### Results

#### Crickets 101



Day	Dark	Light
Monday	5	0
Tuesday	3	2
Wednesday	3	2
Thursday	4	1
Friday	5	0

Day 1: 5 crickets were on the dark side & 0 crickets were on the light side  
Day 2: 3 crickets were on the dark side & 2 crickets were on the light side  
Day 3: 3 crickets were on the dark side & 2 crickets were on the light side  
Day 4: 4 crickets were on the dark side & 1 crickets were on the light side  
Day 5: 5 crickets were on the dark side & 0 crickets were on the light side

### Conclusion

We hypothesize that the crickets would like the dark better than the light.

### References

the regens of the University of Michigan. (2013) Crickets: Gryllidae. Retrieved on January 14, 2013 from [www.biodid.umich.edu/cricket/Gryllidae](http://www.biodid.umich.edu/cricket/Gryllidae)

crickets Fun Pack. (2010) Retrieved on January 14, 2013 from [bestinsects.com/crickets.html](http://bestinsects.com/crickets.html)

### Acknowledgments

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# Education a Priority

*“Learning is not compulsory...neither is survival.”*

*– W. Edwards Deming*

*“Without vision, the people perish.”*

*- Solomon*

# The Early Results





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# Links

Alliance for Excellent Education [www.all4ed.org](http://www.all4ed.org)

Blue Valley Schools Center for Advanced Professional Studies [www.bvcaps.org](http://www.bvcaps.org)

Educate Texas <http://www.edtx.org/>

Global Achievement Gap [www.gse.harvard.edu/clg](http://www.gse.harvard.edu/clg)

Harvard Graduate School of Education <http://www.gse.harvard.edu/>

International Center for Leadership in Education [www.leadered.com](http://www.leadered.com)

Jobs For the Future [www.jff.org](http://www.jff.org)

Reinventing Education [www.schoolchange.org](http://www.schoolchange.org)

The Leadership & Learning Center [www.leadandlearn.com](http://www.leadandlearn.com)

Texas Bioscience Institute [www.texasbioscienceinstitute.com](http://www.texasbioscienceinstitute.com)

Tony Wagner, Global Achievement [www.tasanet.org](http://www.tasanet.org)

University Park Campus School [www.upcsinstitute.org](http://www.upcsinstitute.org)

Where America Stands <http://www.youtube.com/watch?v=Sem6XrROkee>