



# STEM Careers Infographic Project (SCIP)

## Teaching Media-Based Computational Thinking Practices



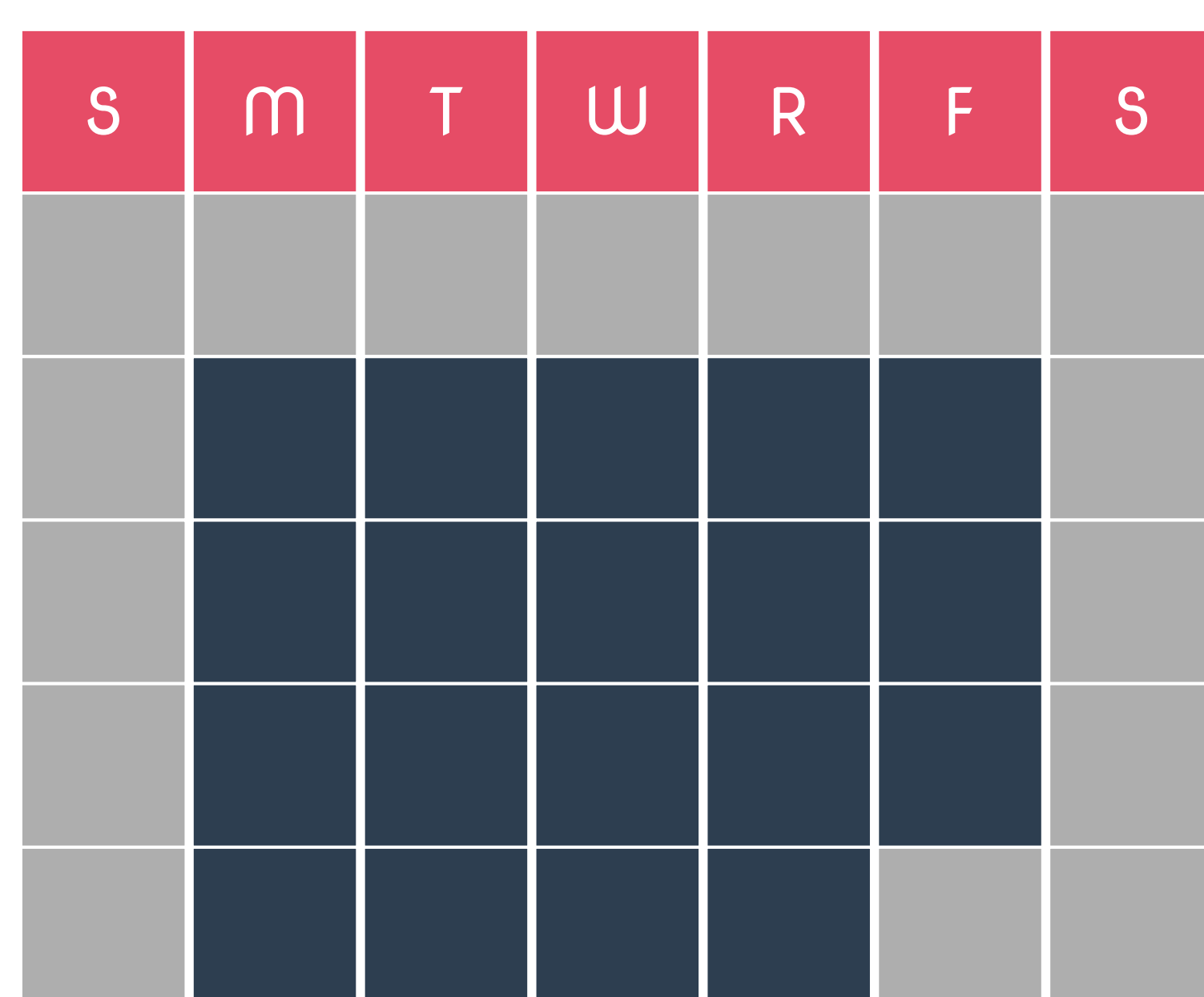
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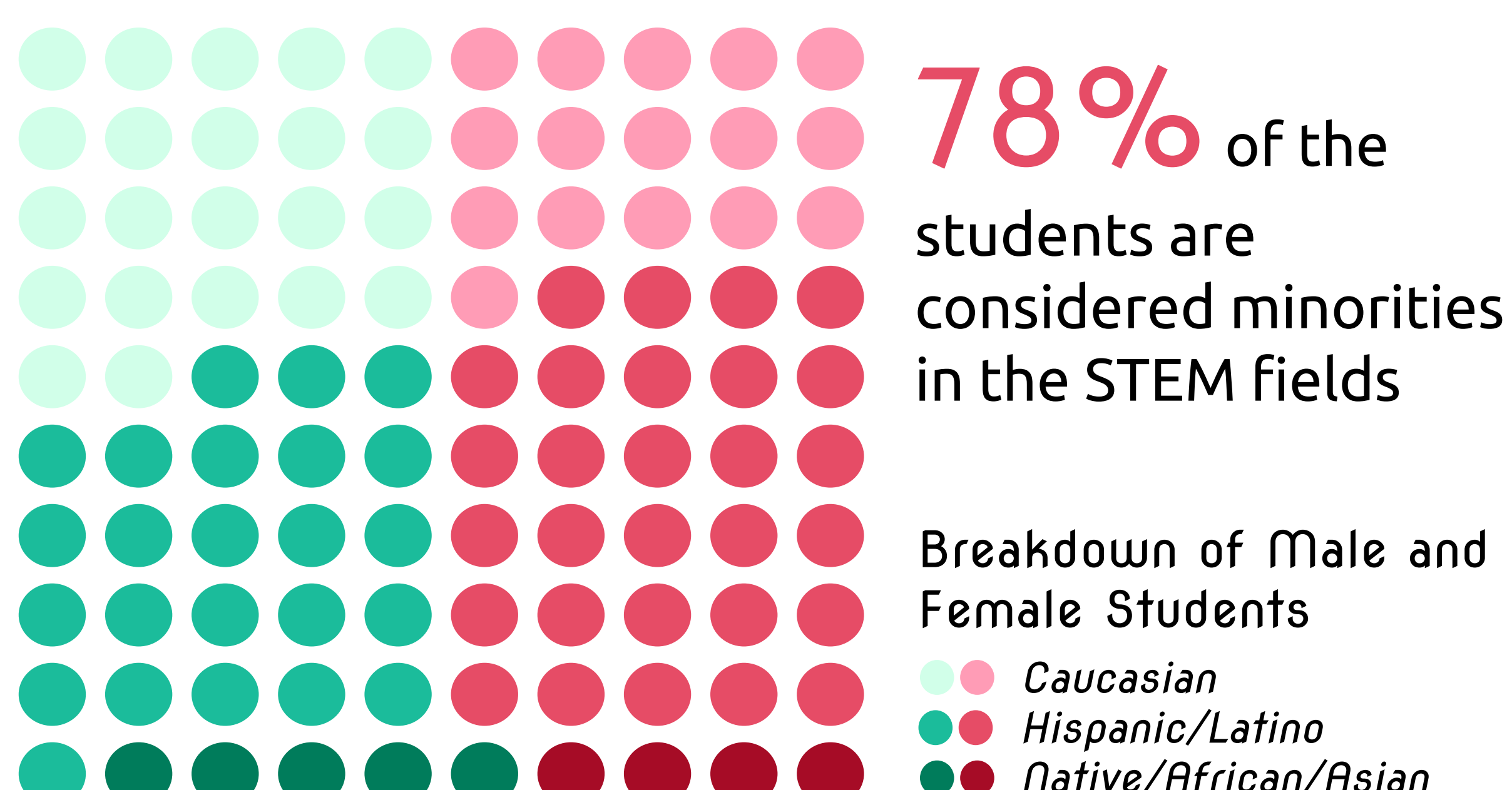


## Introduction

The STEM Career Infographic Project (SCIP) was a 4-week exploratory project deployed in an 8th grade classroom at Mountain Vista Middle School (MVMS).



SCIP was poised to address the growing focus on STEM fields at MVMS and within the school district. We piloted SCIP in Spring 2014 with six science classes or about 180 students.



SCIP allowed for students to explore their own STEM interests, while simultaneously engaging in the 6 Computational Thinking Practices (CTP) outlined by the College Board.

- ▶ A large proportion of the students have **limited exposure to STEM careers**
- ▶ Students at this age are **not aware of their career and college options**
- ▶ Many students **do not have access to technology**
- ▶ Students are not exposed to **other forms of communication**

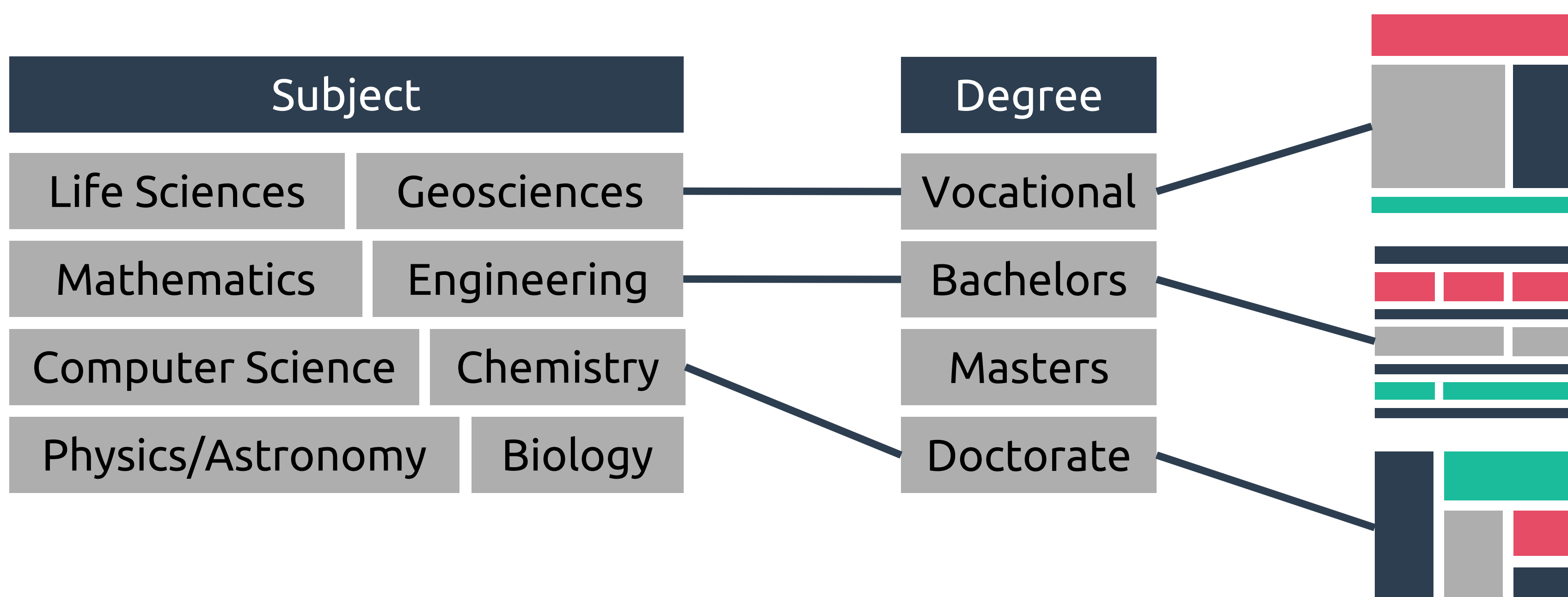
SCIP addressed each of these problems in a manner that provided students with relevant and practical information

## Computational Thinking Practices (CTP)

### 2 Developing computational artifacts

### 3 Abstracting

Students were required to research a STEM career in-depth, then report on their careers using infographics.

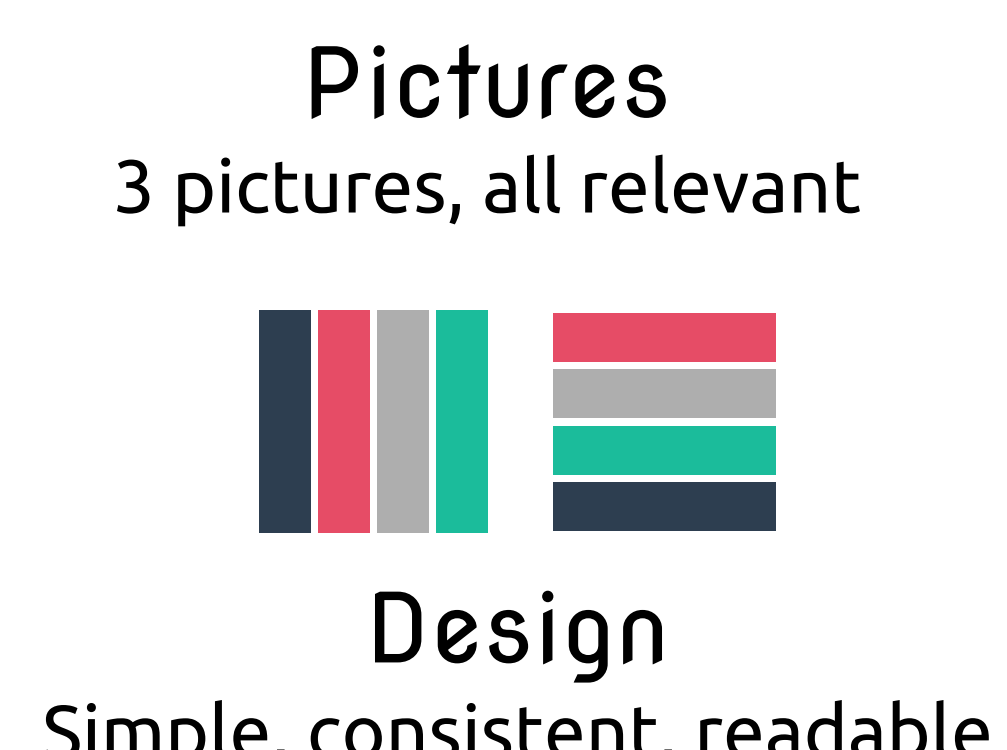
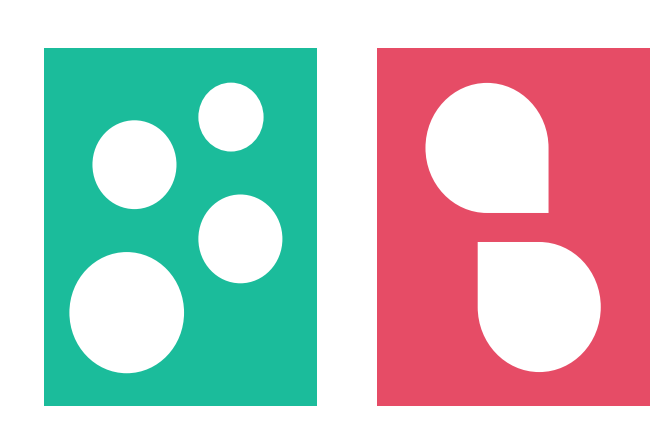
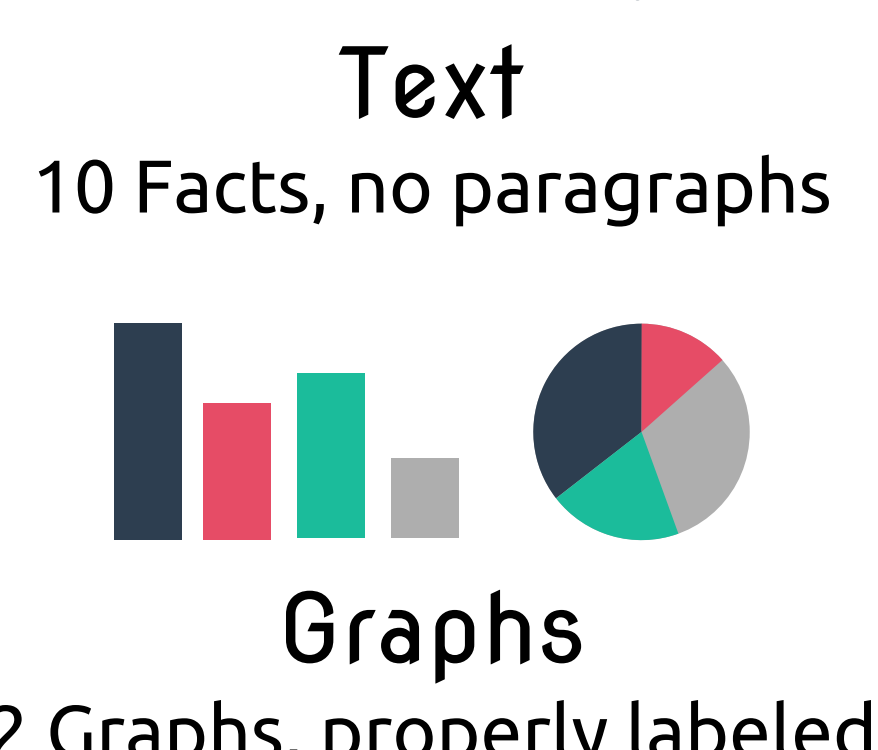


### 1 Connecting Computing

### 4 Analyzing problems and artifacts

We used free and online programs to create the infographics; this provided the students the opportunity to learn software they were not previously exposed to and to explore new communication tools.

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### 6 Working effectively in teams

SCIP also provided many occasions for the students to work together by sharing career information or helping each other with the software.

#### Researching

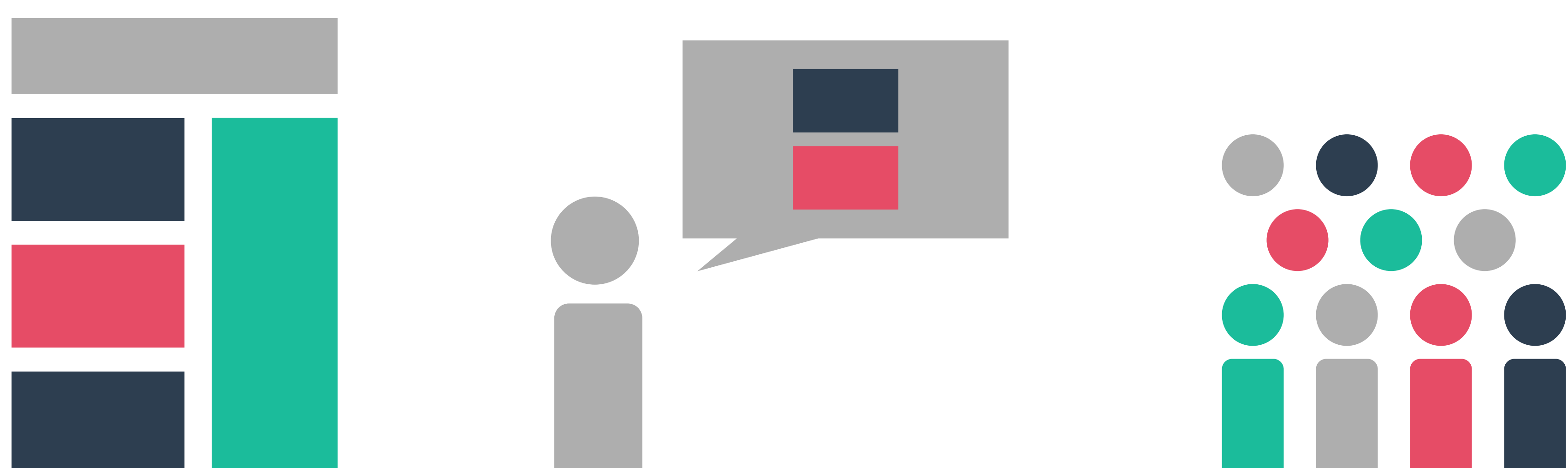
- ▶ Students were encouraged to **share sources** with one another
- ▶ If they had trouble understanding, they had to **ask 1 peer** before asking the instructor for help
- ▶ Students with **similar careers sat together**, so they could get help from one another

#### Peer Review

- ▶ After the rough draft, **students reviewed each other's** infographics
- ▶ Students had to **make the changes their classmates suggested** before turning in their final drafts

### 5 Communicating

At the end of the project the students presented their infographics in front of the class and taught their classmates about their career.



## Results

Overall, the project was incredibly successful. The students had a positive affect through the duration of the project and many also expressed an extreme level of interest in doing similar projects in the future.

## Future Work

We will be repeating this project in Spring 2015, with a few adaptations and formal evaluation scheme.

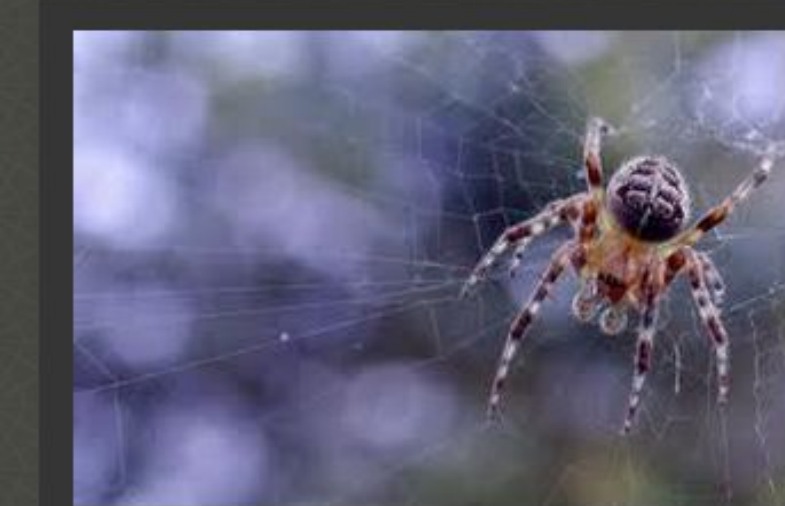
## Acknowledgments

We would like to thank the National Science Foundation for supporting this work and the ECSITE GK-12 Program under Grant No. 0841423.

## Arachnologist

Scared of spiders? Imagine working with them!

An Arachnologist is a person who studies spiders or other related animals that are called arachnids.



Ohio State University and Indiana University are the most recognized and successful universities for arachnology.



Arachnologist usually work alone, in the zoo or they're part of a company.



Arachnologists work mostly with deadly spiders including tarantulas, black widow and brown recluse.

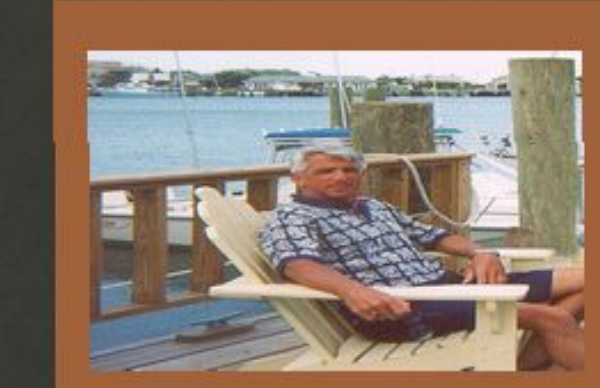
Arachnologists estimate that about 15,000 arachnids are extinct.



An arachnologist's average salary is \$60,000 per year.

Arachnologists know if it's an arachnid by the animal having eight walking legs, two main body parts, jaws adapted for tearing, simple eyes, and a skeleton outside body.

Arachnologists travel out the country at least 2 or more times to study.



Ronald V. Dimock Jr. is one of the most successful arachnologists. He has studied over 400 species and has traveled to South America to study one of the most poisonous spiders.

Work Cited

\* <http://marshalledinlab.com/2013/07/31/american-arachnological-society-meetings-2013/>

\* <http://www.arachnology.org/>

\* [http://wiki.britishspiders.org.uk/index.php/2012to-Main\\_Page](http://wiki.britishspiders.org.uk/index.php/2012to-Main_Page)



Arachnid Population (70,000 Species)

Student Infograph #1  
Student became interested in STEM topic after career was assigned

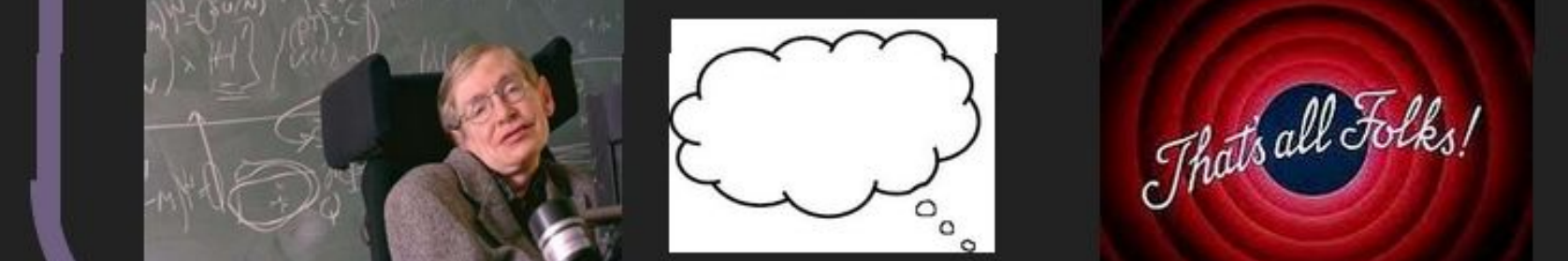
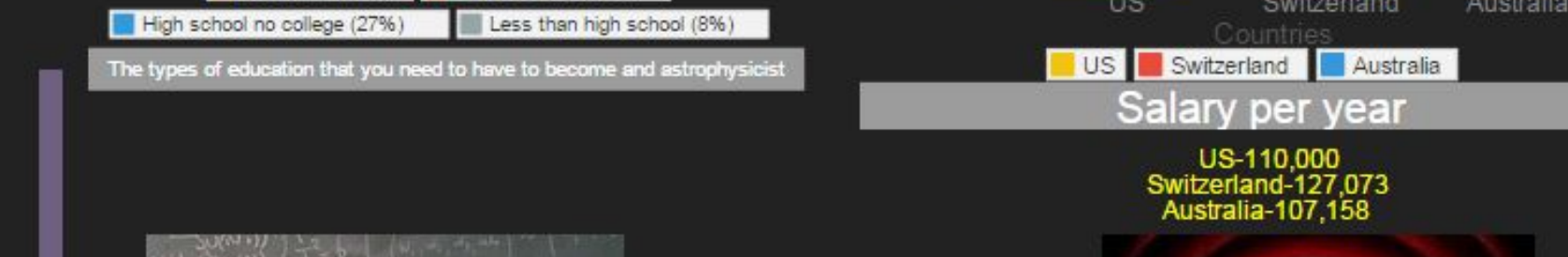
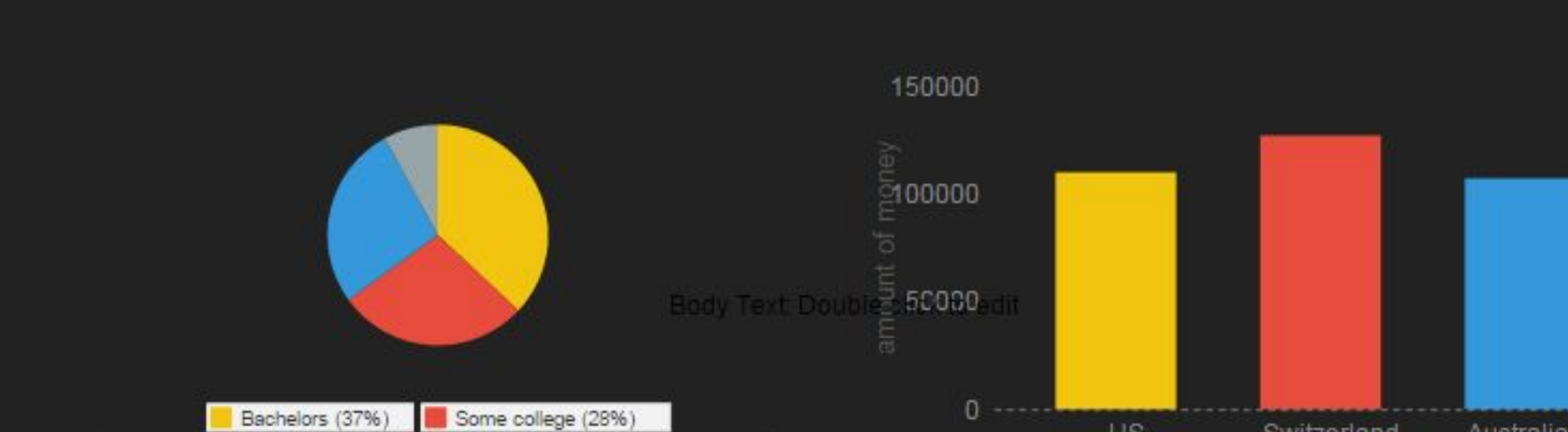
## Astrophysicist



**What is an astrophysicist?**  
An Astrophysicist is the study of objects found in space. It is also one of the oldest fields of study.

**Types of Education**  
You will need a bachelor in science. You will need a PhD in for federal government research. You will need 3 levels of university calculus.

**Salary**  
The average salary for a group is \$51.57 per hour. The average starting salary for a professor is \$52,000 a year.



Stephen Hawking was a quantum physicist that discovered many things (theories). I chose this topic because I knew that it had to do with space and in kind of interested in space. Although I don't like how there is so much math involved.

He has a major impact on scientists because of the theories he discovered (Hawking radiation) if a black body radiation is released by black holes.

Thanks for watching!

www.wikipedia.org  
http://www.bbc.com  
http://www.scientificmethod.com  
http://www.astrofizika.com  
http://arashworld.blogspot.com/

Student Infograph #2  
ELL Student was able to equally participate in assignment by including lots of pictures and graphs