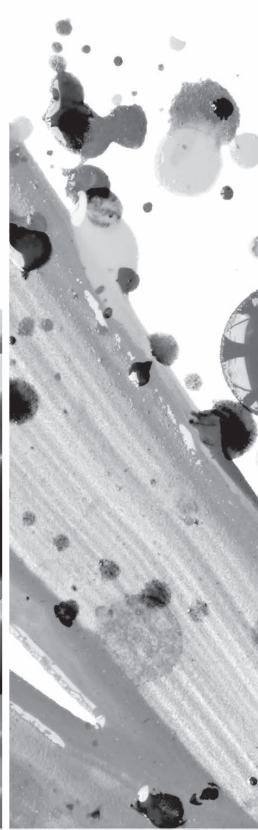


STEAM

SCIENCE TECHNOLOGY ENGINEERING ART MATHEMATICS

FOR THE SCHOOL COUNSELOR

Project- and Problem-Based Learning Activities for Grades K-8



WRITTEN BY
TESHIA STOVALL DULA, ED.S.

About the Author

Teshia Stovall Dula, Ed.S. has worked in education for over 20 years, and she has been a school counselor for 19 years. As a school counselor, she worked with middle school students for 7 years and she has worked with elementary students for the past 13 years. She has created many activities and lessons related to play and learning. She enjoys reading, writing, and playing. She is married to Michael, a fun physical therapist. She is also a proud Mom to three enthusiastic children: Harrison, Alyssa, and Nathaniel.

Dedication

To Harrison, Alyssa, Nathaniel, and my thousands of additional children I have had the pleasure to draw, paint, dance, and play games with over the last 20 years!

STEAM for the School Counselor

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		2	3	4	5	6	7	8
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K	1	2						
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K	1	2						
K	1	2	3	4	5	6	7	8
K	1	2	3	4	5	6	7	8
		2	3	4				
			3	4	5	6		
			3	4	5	6		
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					5	6	7	8

INTRODUCTION TO STEAM

SCIENCE TECHNOLOGY ENGINEERING ART MATHEMATICS

Today's students might one day work in careers that have not yet been developed. They will need to be creators, innovators, mathematicians, artists, scientists, and engineers. Today's students, more than any previous generation, will be challenged to solve problems, gather and evaluate information, and cultivate new technologies.

This program, *STEAM for the School Counselor*, is based on the premise that the majority of 21st century careers will require Science, Technology, Engineering, Art, and Math skills. In classrooms all across the country, students are using the engineering design process (a series of steps that engineers follow to come up with a solution to a problem) to answer and solve problems.

Each *STEAM* lesson involves project- and problem-based learning. Students usually work in groups that are given a problem to solve as a team. While working together, they build problem-solving skills, research and form ideas, and practice presentation, collaboration, and communication.

The activities provided in *STEAM for the School Counselor* are different from traditional science, technology, engineering, art, and math classroom lessons, because counselors are given the opportunity to work with students on career, academic, and personal/social competencies. Although the American School Counseling Association encourages school counselors to teach career, social skills, and academic competencies, they are not charged with teaching content area information. Therefore, school counselors have wiggle room in how *STEAM* lessons are presented. By speaking the language of 21st century students, school counselors have an opportunity to reach students in a unique way from conventional counseling strategies, activities, and lessons.

STEAM for the School Counselor allows professional school counselors to integrate the activities into their individual work with students, small-group activities, or core curriculum lesson plans. All of the ideas presented, will work well with the 35 mindsets and behaviors set forth by the *American School Counseling Association* and *Common Core Curriculum Standards*.

I hope that you enjoy watching your 21st century students learn and grow in a more engaged and enthusiastic way!

Teshia Stovall Dula, Ed.S.

Fingerprint Forensics

Themes: Diversity • Respect • Teamwork

Materials required for each student:

- Notecard or piece of paper



Materials required for each pair of students or small group:

- Black ink pad
- Pen or marker
- Magnifying glass

Directions:

1. Divide the students into pairs or small groups (about four students per group).
2. Give each student a notecard or piece of paper.
3. Give each pair of students or group of students a black inkpad, a pen or marker, and a magnifying glass.
4. Tell the students to roll one finger from left to right across the ink pad.
5. Have the students create fingerprint designs on the notecards/paper.
6. Have the students write their names on the notecards/paper.
7. Instruct the students to use the magnifying glasses to study/observe the patterns in their fingerprints.

Processing questions:

1. What did you notice about your fingerprints?
2. How are people the same? Different?
3. Can you see differences in people by just looking at them?
4. How can we show respect for people who are different than us?
5. How can people from different cultures join together to help a community? *(People can help a community by working together and respecting each others' differences. People from different cultures can share their unique perspectives and ideas to help strengthen schools, hospitals, and services.)*
6. How can people from different cultures help solve problems? *(They can work together and share their ideas and knowledge to make their community better.)*
7. If we were all the same, what would our world be like?
8. What did you learn about yourself today?

All About Me! Newsletter

Themes: Listening • Awareness • Self-Insight

Materials required for the leader:

- Computer(s)
- All About Me! Newsletter* template (.doc – included on CD) or a template downloaded from the Internet then modified

Materials for required each student:

- All About Me! Newsletter Planning Sheet* (page 36 or CD)
- Pencil

Directions:

1. Prior to presenting the activity, set up one or more computers with a newsletter template.
2. Give each student a copy of the *All About Me! Newsletter Planning Sheet* and a pencil.
3. Tell the students to complete the planning page.
4. Have the students transfer the information into the *All About Me!* newsletter template or other template on the computer.
5. Allow the students to present their newsletters to the group/class.

Processing questions:

1. What did you think about when I first told you that you were going to create a newsletter? Were you confident that you could accomplish the task?
2. How do you feel now that you have succeeded in creating your own personal newsletter?
3. What did you learn about yourself today?
4. What did you learn about the other students in our group/class?
5. Did you enjoy the activity? Why or why not?

Five Minute Challenge

Themes: Cooperation • Teamwork

Materials required for the leader:

Clock or timer

Materials required for each small group:

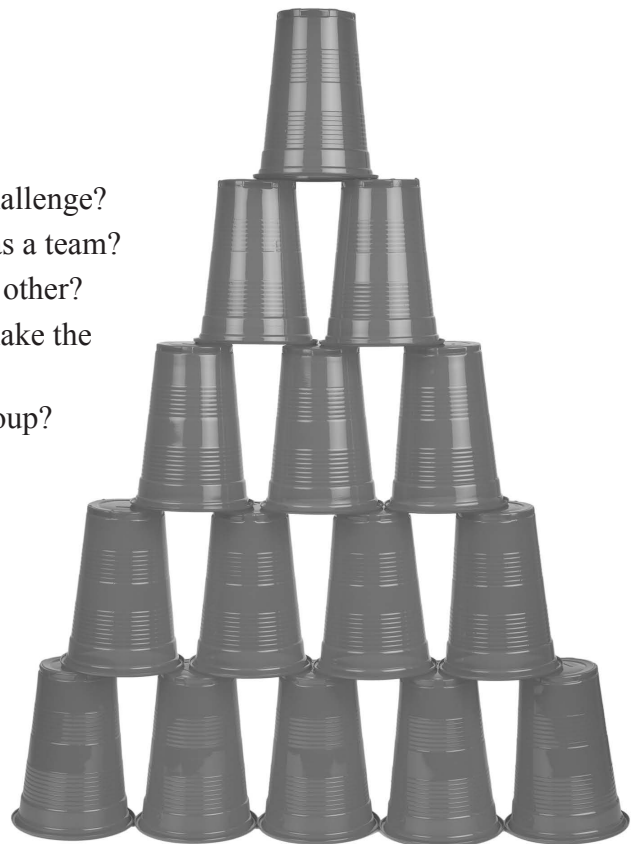
1 package of plastic cups

Directions:

1. Divide the students into small groups (about four students per group).
2. Give each group of students a package of plastic cups.
3. Tell the students that today's challenge is to build the tallest cup tower.
4. Allow the students five minutes to work together to build the structure.
5. The tallest tower wins.

Processing questions:

1. How well do you think your group did in the challenge?
2. Did the members of your group work together as a team?
3. How did it feel when you cooperated with each other?
4. How did you feel about the time limit? Did it make the challenge harder?
5. How do you feel about the members of your group?
6. What did you learn about yourself today?



Quadrama

Theme: Self-Discovery • Following Directions

Materials required for each student and the leader:

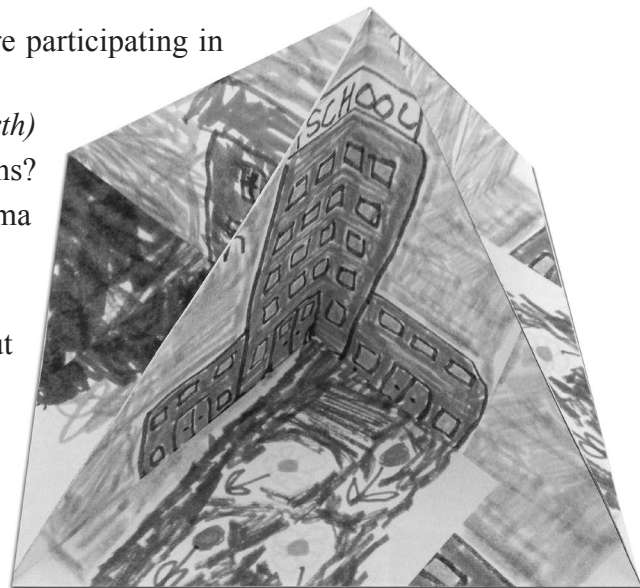
- Four 9" x 9" pieces of construction or heavyweight paper
- Crayons or markers
- Scissors
- Glue stick
- Pencil

Directions:

1. Prior to presenting the activity, cut four pieces of rectangular construction or heavyweight paper into 9" x 9" squares for each student. Optional: Have the students do this during the lesson.
2. Give each student four pieces of square construction paper, crayons or markers, scissors, a glue stick, and a pencil.
3. Demonstrate how to make a Quadrama as you give the directions on page 112.
4. Have the students share their Quadramas with the group/class.

Processing questions:

1. Did you know what a Quadrama was before participating in this activity?
2. What does the prefix *quad* mean? (*four, fourth*)
3. Was it easy or difficult to follow my directions?
4. Are you proud of the way your Quadrama turned out?
5. What did you learn about yourself today?
6. What was something new you learned about another student in this group/class?



Group Reflection: How Well Did Your Group Do?

Circle the picture that best shows how your group did.

We worked well together.



We followed the directions for the activity.



We were respectful to each other.



We did our best work.



We finished the activity.



Next time, we will _____



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Group Reflection: How Well Did Your Group Do?

Circle the picture that best shows how your group did.

We worked well together.



We followed the directions for the activity.



We were respectful to each other.



We did our best work.



We finished the activity.



Next time, we will _____

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Group Members: _____

Bully Bustin' Quiz Show Planning Sheet



CATEGORY 1 TOPIC:	
10 point question:	
10 point answer:	
20 point question:	
20 point answer:	
30 point question:	
30 point answer:	
40 point question:	
40 point answer:	
50 point question:	
50 point answer:	
CATEGORY 2 TOPIC:	
10 point question:	
10 point answer:	
20 point question:	
20 point answer:	
30 point question:	
30 point answer:	
40 point question:	
40 point answer:	
50 point question:	
50 point answer:	



Food Truck Friday Plan & Timeline

DETAILS/NOTES	
Theme	
Day and Time of Event	Date From to
Sponsors' Names	
(people that may want to contribute financially to the event)	

Event Timeline	Date to Contract/Hire/Purchase
Food Trucks	
Food	
Paper Goods	
Decorations	
Music (DJ/Band)	
Other Entertainment	
Advertising	
Door Prizes	
Park Custodial Staff	
Police Officers/Security	
Portable Bathrooms	

NOTES: