

Communicate effectively with parents and family members through a STEM newsletter

BY KYLIE S. HOYLE, LAUREN A. HARPER, KRISTIE S. GUTIERREZ,
AND MARGARET R. BLANCHARD

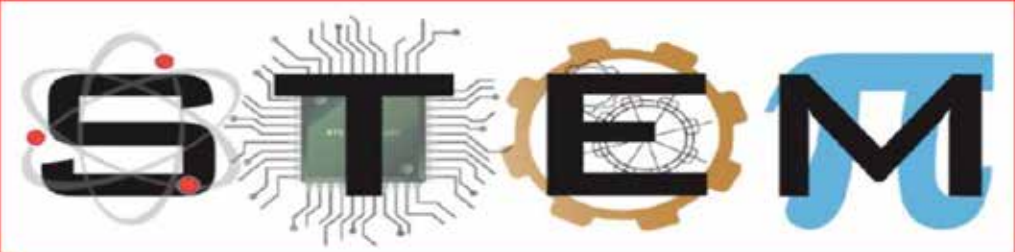
It can be challenging to keep family members informed about what is happening at school. Yet, sharing what students are learning in class or during after-school clubs with those at home is critical to student success (Epstein 2001). Newsletters are an eye-catching way to keep family members updated on student activities, guest speakers, STEM content, career connections, vocabulary, related links, and upcoming club dates. We developed newsletters that aligned with each of our STEM Career Club meetings to keep parents informed; however, they can be modified and used to share information about any club or classroom. The newsletter can be printed out and sent home, or shared through email, school website, or social media.


Key parts of a STEM newsletter

- 1. Program/school/teacher name**
The name of your program, team, teacher, or club will promote your (and your colleagues') positive work, as well as that of your school or club.
- 2. Today's date and upcoming meetings**
The date lets families know what is happening right now, and can also advertise upcoming meetings, field trips, and volunteer days.
- 3. Student-written or news articles**
Students can take turns writing for the newsletters, and interesting and informative articles can extend the learning from a class or a club, or highlight professionals in relevant careers. Giving students a voice can get them excited to see the newsletters when they come out.
- 4. Social media names, links, or hashtags**
Include social media pages associated with your class, program, or club to help keep parents and students connected.
- 5. Appealing graphics**
Graphics from online sources, especially familiar cartoons, help attract students and their family members.
- 6. References**
Remember to cite information or graphics from other sources to credit the work, provide access to the sources, and provide a model for students on how to properly cite.
- 7. STEM-ipedia**
Reminds students and informs family members of relevant terminology.
- 8. Content quiz**
A short content quiz tests students' knowledge and allows them to "stump" their family members. The answers to the quiz questions can be placed at the very bottom of page 1 in small font and upside down.
- 9. STEM career descriptions**
Providing information about related STEM careers can increase students' knowledge about, awareness of, and interest in STEM careers and majors (Kier and Blanchard, 2016). Links to videos and additional information should also be included. We recommend emphasizing


FIGURE 1: STEM newsletter front page

STEM CAREER CLUB: SCIENCE SCOPE MIDDLE SCHOOL
Volume 2 Issue 2





Career Club




STEM CAREER CLUB: SCIENCE SCOPE MIDDLE SCHOOL

1

2

Meeting #2:



2

2016 - 2017 STEM Club Meeting Dates

* Indicates there will also be a parent meeting

Sept 20	Sept 20
Oct 11	Oct 11
Oct 25	Oct 25
Nov 8	Nov 8
Nov 29	Nov 29
Dec 13	Dec 13
	Make up date

ADMIT ONE
MEET THE MAN BEHIND THE MOVIE:
FLOYD NORMAN

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

FIGURE 1: STEM newsletter, back page

STEM CAREER CLUB. SCIENCE SCOPE MIDDLE SCHOOL Volume 2 Issue 1

STEM-ipedia 7

Backgrounds – appearance of stage
Blocks – tell a sprite what to do such as move, play music or react
Blocks Palette – area that contains the basic blocks for programming your sprites
Costume – a sprite's outfit/clothes
Interactive – a two way system of electronic communications, by TV or computer
Paint Editor – creates or edits costumes or backgrounds
Scripts – set of instructions for sprite
Scripts Area – where blocks are dragged and snapped into a sequence
Sequence – serial arrangement for things to occur in logical order
Sprite – user defined object (character)
Stage – where you see your stories, games, and animations come to life


STEM Careers 9

3D Modeler – Create three dimensional computer models of objects such as video game characters, building designs, prosthetics, etc.


To find out more about 3D Modeling, check out:
<https://www.chegg.com/career-center/explore/3d-modeler>

Animator – Design animated movies, cartoons, or commercials using computer software.

To find out more about animating, check out:
<http://www.animationcareerreview.com/articles/animator-career-profile>



3D Modeler 9



Animator 9


Check your electrical mastery! 8

- Electricity can travel through:
 - A) Insulators
 - B) Conductors
 - C) Semiconductors
 - D) Anything
- What item below would be classified as an insulator?
 - A) Aluminum foil
 - B) A rubber band
 - C) A paper clip
 - D) Copper wire
- If you have just created a closed circuit, what does that mean?
 - A) That electricity can travel all the way through
 - B) That electricity can travel almost all the way through
 - C) That electricity can't travel at all
 - D) That electricity will bounce around the circuit
- Why are humans conductors of electricity?
 - A) We have blood pumping through us
 - B) We are capable of being anything
 - C) We are mostly made up of water
 - D) We are not cond

Coding and You 10


Have you ever heard of "coding" before? A lot of people are familiar with the term, but not really what it means. Think of code as a special language for computers. Computer scientists and programmers use code as a way to communicate with the computer and tell it what to do, since computers do not understand words. You come in contact with the benefits of coding on a daily basis. All computer programs, computer software, apps, websites, browsers, social media sites, and online stores all function off of code that someone has developed.

When using software such as Scratch at the STEM Career Club meetings, you are also using code to create your own program just like web developers!



Welcome to SCRATCH!!! 10

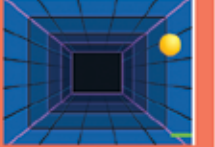
This week in STEM Career Club we explored Scratch. Scratch is a free online program that lets you create your own games, animations, videos, etc. and share them with others. You had time today to begin creating your own Scratch masterpiece, so let's take a look at what other people have created!



DJ Scratch Cat!
This is a music game that allows you to create your own beats by tapping on the keyboard.



Pizza Chef!
This is a video sensing game that uses your microphone and webcam to create pizzas without dropping them!



Pong Starter!
This game allows you to use your mouse to move the paddle back and forth across the screen to gain points.

References: 6

- <http://www.cogswell.edu/courses/3d-modeling-for-animation-career.php>
- <http://www.nbcnews.com/news/latino/latino-animator-jose-zelaya-learned-draw-during-salvadoran-civil-war-n538736>
- <http://verehumans.com/en/coding/>
- <https://scratch.mit.edu/>

ing diverse individuals in STEM careers. Contact Meg Blanchard (meg_blanchard@ncsu.edu) for information and links to videos about STEM careers.

10. Real-life extension

Include short, real-life extensions to show students and parents how the things they are learning are useful and important in their lives.

Make your own!

To create newsletters, you can use tools such as Microsoft PowerPoint or free online resources offered through Canva or S'more

(see Resources). These tools offer user-friendly, free templates for teachers and can be posted on social media platforms (e.g., Twitter, classroom website) without jeopardizing the newsletter format. ●

REFERENCES

Kier, M.W., and M.R. Blanchard. 2016. April. *Rural, high poverty middle school students' STEM career explorations and identification.*

Paper presented at the National Association for Research in Science Teaching, Baltimore, Maryland.

Epstein, J. 2001. *School, family, and community partnerships: Preparing educators and improving schools.* Westview Press: Bolder, CO.

RESOURCES

Canva—www.canva.com

Harper, L.A. 2016. September 13.

Scratch. *STEM Career Club 2* [1-2].

S'more—www.smores.com

Kylie S. Hoyle (kswanson@uccs.edu) is an assistant professor of inclusive elementary education at the University of Colorado in Colorado Springs. **Lauren A. Harper** is a high school science teacher in North Carolina and a graduate student at North Carolina State University in Raleigh, North Carolina. **Kristie S. Gutierrez** is an assistant professor of science education at Old Dominion University in Norfolk, Virginia. **Margaret R. Blanchard** is an associate professor of science education at North Carolina State University in Raleigh, North Carolina.

Enhanced E-books

SIMULATIONS • ASSESSMENTS • VIDEOS



Whether you're learning science content for the first time or you just need a refresher, NSTA's highly interactive and engaging Enhanced E-books are full of dynamic features that enable you to learn science content and pedagogy. Simulations, animations, and video bring content to life, while embedded review questions and special notes help underscore the most crucial points of knowledge.

Member Price: \$23.96
Non-member Price: \$29.95

Discover the ultimate professional learning experience:
www.nsta.org/ebooks



NSTA
eBooks⁺
National Science Teachers Association