

The REMC12E STEM/Maker CHALLENGE

2018 - 2019 School Year

*Are you interested in implementing STEM but not sure where to start?
Do you need some fresh ideas to expand on the STEM activities you are
already doing?
Would you like to try out using Maker materials that are new to you?*

If you answered yes to any of these questions, you should participate in our STEM/Maker Challenge this year! To participate, your students will complete STEM activities as part of your curriculum. You choose which ones and how many you would like to complete - and there is a "bonus" if you complete 4 or more!

General Information

Who: ANY classroom teacher (even those that don't know what STEM is!)

When: 2018-2019 School Year

What: Integration of STEM activities in your classroom activities

Cost: FREE to participate!

Why: STEM activities are most effective when included in classroom learning activities, and can expose students to new Maker-type tools that enhance the learning process.

If you would like more information, or definitely want to participate, please fill out the [REMC12E STEM/Maker Challenge](#) form!

Completing an Activity

Here are the steps to completing an activity:

1. Brainstorm the activity you would like to do ([see examples below](#) for ideas!)
2. Fill out the [STEM Activity Planning](#) form to let Melinda Waffle know what materials you need, and your general ideas.
3. Finish planning your activity. You can use the [STEM Activity Template](#) if that helps you.
4. Complete the activity with your students
5. Return the materials via REMC Deliveries
6. Add summary & reflection information to your activity plan
7. [Post feedback form](#) completed by you, and students complete [student feedback form](#)

Supports Provided

In addition to the [resources listed below](#), participants will receive:

- Maker materials needed for activities on a checkout basis (items available can be found on the [REMC12E Classroom Maker](#) page)
- Email support for troubleshooting
- [Activity template](#) (optional) - here are examples ([test track](#), [Memorial Day](#))

Super Challenge Parameters:

If you take on completing 4 or more STEM activities through the challenge this year and meet the following parameters:

- At most 2 submission in the same category (main bullet points under activity options)
- At least 1 submission is from the Dual Challenges category
- Submission of:
 - lesson plan of your activity to share with others (your own, or using provided template)
 - video evidence of each activity

You will receive the opportunity to choose 1 item from a list of Maker materials to have permanently in your classroom! (*Value varies depending on the item selected. Some examples of what you might choose - 2 mini sferos; a set of KEVA planks; 3 Makey-makeys.*)

Super Challenge Dates:

Remember: activities may always be completed ahead of the timeline.

October 17 (W) at 3:30 - Virtual Meeting (<https://meet.google.com/mro-cpyh-utz>)

- answer your questions about the challenge
- provide examples of previous challenges
- brainstorm a few ideas you might use for your first challenge

October 24 (W) from 8:30-12:00 - Exploring STEM Workshop ([flyer](#))

October 26 (F) by 4pm - First Idea Submission

November 30 (F) by 4pm - First activity complete

- Plan & reflection document shared
- Video submission complete

December 7 (F) by 4pm - Second Idea Submission

February 1 (F) by 4pm - Second activity complete

- Plan & reflection document shared
- Video submission complete

February 8 (F) by 4pm - Third Idea Submission

March 29 (F) by 4pm - Third activity complete

- Plan & reflection document shared
- Video submission complete

April 12 (F) by 4pm - Fourth Idea Submission

May 31 (F) by 4pm - Fourth activity complete

- Plan & reflection document shared
- Video submission complete

Activity Options:

The following are all ideas - whichever activity type you choose to use can be modified to your curriculum and students. Not sure how to incorporate an idea? Attend the ½ day training on October 24!

Have an idea that isn't included? Propose it! The list of options will grow throughout the year.

- Greenscreen activity using greenscreen & video editing
 - Historical news cast
 - Reenactment of historical event
 - Public Service Announcement about issue in school
 - Interview
 - Opposing Viewpoints panel
- Engineering activity using KEVA planks
 - Earthquake - building stable structures with Keva
 - Decline challenge
 - Cardboard challenge using Makedo
 - Distance challenge - given max height & length, get item the furthest
 - Interactive Cardboard Robotics
 - Use cardboard to scale up/down and construct a common item
- 3D Printer activity
 - Design a tool that makes an everyday job easier
 - could be set to a time period in History class
 - Design a fix/replacement part for something that is broken
 - Design a model for a concept you are currently studying in mathematics or science class
- Sphero coding activity
 - Health body systems - move the sphero through system & explain processes taking place
 - Math - timing between distances, measuring speed;
 - Science - testing variety of surfaces (friction) - calculating degree of friction - acceleration; max inclination it can climb on different surfaces
- Bloxels activity
 - Design a game that relates to what you are learning
- Makey-Makey activity
 - Program a Musical Instrument
 - Create an operation type game
- Breakout activity
- Dual Challenges
 - KEVA & 3D Printer - Design and 3D print connectors to make Keva blocks more useful in construction
 - KEVA & Spheros - Incline & decline challenge - minimum heights, program sphero up & down, with stops.
 - Greenscreen & Bloxels - use a background designed with Bloxels in a Greenscreen production
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Resources:

- Activities to explore tools:
 - [Sphero.edu Activities](#)
 - [Sphero Challenge Cards](#)
 - [KEVA Plank Challenge Cards](#)
 - [Strawbee Challenge Cards](#)
 - [Dash Challenges](#)
- [Edupath Courses](#) (Spheros, Ozobots, KEVA Planks, Bloxels)
- Teacher Resources
 - Sphero
 - [Sphero](#)
 - mini-Sphero - [Getting Started](#)
 - mini-Sphero - [No Smart Device game](#)
 - [Sphero ideas](#)
 - KEVA
 - KEVA Videos (YouTube) [Buildings & demotion/simulations](#)
 - [KEVA Lesson Plans & Activities](#)
 - [Bloxel Resources & Lesson plans](#)
 - [Classroom Activities Using Dot & Dash](#)
 - [Ozobot Resources & Getting Started](#)
 - [Greenscreen Resources](#)
 - [Makey-Makey Resources](#)
 - [Strawbee Resources](#)

Additional Tools:

- Free Movie Editing Software options
 - [Movavi](#) - Mac or PC, requires a download
 - [OpenShot](#) - Mac or PC, requires a download
- Sphero Apps
- [Bloxel Builder App](#)

Q&A

Q: By signing up, are materials being provided to classrooms to complete the challenge?

A: Yes, materials are being provided on a checkout basis for the duration of the challenge you are currently completing.

Q: Is there a targeted age group?

A: There is no target age group - any class/student group K-12 can participate.

Q: This is a rather large time commitment...

A: Each challenge should take students 3-5 hours, depending on how involved you would like it to be. Some teachers do invest more time than others, and that is ok.

Q: Is there a target group or class?

A: The target group/class can vary as each teacher is choosing which of the 4 challenges they wish to complete and when.

Q: I'm struggling to implement the activity in a meaningful way, are there supports?

A: You can contact Melinda Waffle at wafflem@calhounisd.org and she can do a virtual meeting with you to explore what will work well for you and your students.

Q: How does STEM fit into my lesson?

A: You know the **content** (standards) you wish students to learn, the STEM activity will provide the **context** for the learning. That is why the challenge question/problem to solve is so important - and probably unrelated to your "Students will be able to..." objectives.