

The program seeks to identify two schools that can demonstrate a practical and deliberate use of “Maker” tools for increasing student engagement and skills in the creation of meaningful proficiency-based and personalized learning, particularly in the area of “STEAM” (Science, Technology, Engineering, Art and Math). The grant will support the delivery of the *winner’s choice* of the following Makerspace-related components, not to exceed (NTE) \$14,000 and including a \$1,000 professional development budget.

The grant would support, but is not limited to:

- 3D Printer(s)
- Laser Cutter
- Vinyl Cutter
- C & C Router
- Electronic Circuitry component set, i.e. A Little Bits Pro Library, BBC Micro-bits, Circuit Playground, Makey Makey’s, etc.
- Micro-controllers in the realm of Arduino or Raspberry Pi or other related kits
- Robotics kits, in the form of Spheros, Dot/Dash, or other equivalent brand codable “out of the box” robots that are easily incorporated into Maker-spaces.
- Tool sets—hand and/or power tools—bundles or kits best

Note: Other items may be considered on a case-by-case basis—please bring questions related to these items to the conference call

IMPORTANT:

A crucial aspect of this round of grants is to limit the logistical/invoicing operations that the Lottery coordinator must negotiate in the process of obtaining the equipment for schools. In order to streamline that process, as part of the application, applicants will conduct the preliminary research and cost analysis on the items desired and then, if they are allowable purchases, the corresponding vendors will “bill” the VT Lottery directly for the purchases. School personnel will need to coordinate with Peter Drescher, at the Agency of Education to finalize the accounting that is passed along to the Lottery coordinator. A spreadsheet should accompany each application with an accounting of the equipment and professional development being sought. Vendor, quantity, pricing, color, delivery details, and other variables should be included in the spreadsheet. (See a sample in Appendix A).

Should your school be chosen, a meeting will be coordinated to finalize the purchasing. *School districts are limited to \$14,000 for equipment and \$1,000 for professional development. This must be represented in the application to ensure that reviewers fully understand the budget and its purpose.* School districts will need to:

- Gather quotes on equipment/materials/supplies from vendors
- Organize and reflect that information in a spreadsheet with running and final totals represented clearly (again *NTE \$14,000 in equipment and \$1,000 in professional development services*).
- Submit the spreadsheet, along with the application narrative, by due date of February 22, 2019.
- POST AWARD: **IF** the school is awarded, a meeting will be organized to finalize purchases and submit a final accounting/purchase plan to the Lottery coordinator. With approval, the school may then make their orders. The Lottery coordinator will schedule an event with the school to celebrate the delivery of that equipment in the month of April.

To Create or Further an Innovative Program:

This program seeks to support the creation of or further an existing program related to “making” and Maker spaces. There should be a clear connection to the following areas as discussed in the Education Quality Standards:

- A project related to STEM (Science, Technology, Engineering and Math) education, with a clear focus on Technology and Engineering.
- Any project-based learning focus, whereby students are clearly using technology to support projects in core curriculum areas.
- Collaborative learning environments focused on core curriculum.
- Collaborative learning environments or projects focused on supporting a community initiative. (Ex., a web project supporting town history or a particular aspect of a town’s identity.)
- Use of technology to support learning that leverages the [EQS Transferable skills](#):

This grant program seeks to support schools and programs that are engaging in ways to transform education practices with tools of technology. Makerspaces have been shown to be viable and vibrant ways to engage students in project-based learning principles as well as to support personalized learning goals. Proposals should address the ISTE standards for students and be clearly supportive of learning that derives from those standards. Please do not list standards, only indicate ways that they might be met, using the overarching terms for each area (e.g., creativity and collaboration, etc.).

Eligibility:

This grant program is aimed at Vermont K-12 public schools. Regional Career and Technical Education Centers (CTE) are also eligible to apply. While any public school may apply, **awards will be prioritized to schools with a free/reduced lunch (FRL) student population of 40% or above.** Reviewers will look favorably upon, but not be limited to, applications with the following characteristics:

- Small, rural schools with less than 100 students
- **Schools with 40% or higher student population on FRL (required)**
- Schools that lack opportunities for this type of learning already
- A plan to continue local investments in Maker-related spaces and initiatives. In other words, a sustainability plan so the equipment is in use quickly and for the long term.
- Local funds are matched and used for professional development related to the project

This award is an equipment award only, with a small professional development component. It is not for construction related costs of a Maker-space within the school, (walls, electric needs, lighting, etc.). No cash or check will be presented to the school. Equipment will be purchased by the school and invoiced to the Vermont Lottery. Delivery of equipment should be made directly to the school. The professional development component must be limited to the cost of bringing in a professional expert or paying for related costs of training staff on equipment use. The professional development funds are capped at \$1000.00. Any additional expenses will be the responsibility of the school. Equipment delivered will be considered final purchase and ownership will transfer to the school. Warranties are applicable solely from the vendor. Schools may choose to purchase optional services at their own discretion and expense, (service plans, extended warranties, etc.).

The award will NOT include:

- a) Access to broadband services/wireless access points, or other Internet related equipment
- b) Consumables that are not already part of a package plan
- c) Room or space-related equipment and materials—i.e. outlets installed, room partitions, lighting, doors and windows, etc. This is only for equipment students will “use” in the operation of a Maker-space.
- d) Additional service plans or warranties
- e) Disposal plans for end-of-use scenarios—schools should dispose of properly
- f) Funds for personnel of any kind

Press and Publicity:

One of the goals stated above for the program is to increase the general public's awareness of the role the Vermont Lottery plays in supporting education. To that end, awardees are expected to participate in and support the following:

- A mutually agreed upon date and time for Vermont Lottery and AOE personnel to hold an award presentation at the school and take photos and video. Media may also be in attendance;
- Interviews with school administrators, teachers and students;
- Additional press and photographic opportunities sought by the Lottery commission during the first year of the school's work with the new equipment; and
- Photos and video from winning schools to be used by the Lottery in messaging about the Vermont Lottery's support of education in Vermont.

Applying in Consecutive Grant Periods:

Schools awarded in one grant period shall not be eligible for two (2) years after their first award. (For example, the winning school from SPR2019, may not apply again until SPR2021). Schools that were not awarded are free to apply again. It is suggested that applicants use discretion when applying with the same or a similar application from year to year. Keep the project as relevant as possible and remember, this is to showcase a practical and deliberate use of "Maker" tools for increasing student engagement and skills in the creation of meaningful proficiency-based and personalized learning.

Application Format & Content: Educate/Innovate SPR2019

Format:

The application narration should be **no more than four (4) pages**, single-spaced, font sizes 10-12 and adhere to the following sequence and format described below. No more than four pages will be examined by reviewers. (Note: This does not include the proposal cover page or the spreadsheet, described on page 7 of this application.) **(10 Points)**

1. Program Description (no more than two pages): Briefly describe the program or project the addition of this equipment or technology will support. You can propose a new project here **or** you can indicate a project that is already underway and indicate briefly how it addresses an enhancement or expansion of that project. Generalizations about Makerspaces and what goes on there will be of little value, instead indicate how you will use the Makerspace in your school to improve specific student outcomes as they pertain to education standards and transferrable skills. Be clear as to how this specific addition of equipment/technology will enhance student creativity. Give examples of what you hope students will make and create with the addition of this equipment. **(50 Points)**

2. Capacity for Success (no more than one page) **(25 Points)**

- **Staffing:** Is there sufficient staff available to lead the Makerspace, and professional development so staff and students can best make use of the equipment?
- **Makerspace:** Is there an existing space or plans to develop one? Where will the equipment live? When is it accessible? Is it accessible full-time? What barriers need to be eliminated and what plans exist to remove barriers to increase access/use? How will you promote equitable access to the space?

3. Program Evaluation (no more than 1/2-1 page): Describe how you will ascertain and identify student success with the addition of the new equipment in support of or alignment with the EQS or other strategies you have indicated: **(15 Points)**

4. Budget and Spreadsheet (no more than 1-2 pages): This will depend on what you are ordering, but best is something simple with all equipment listed and final totals tallied on the bottom. If there is equipment not readily identified by its title, please provide some brief description. Refer to the Appendix to see how spreadsheet could be simplified.

Hints for success:

- This is an innovation program. Briefly indicate how your school's idea or project is innovative and creative. No need to expound on your overall school innovations, tell the reviewers how this one will make an impact. Describe what students will be able to do.
- Read directions and follow carefully all instructions in the application.
- Spend little to no time describing how your school or school board does not fund

this sort of thing. Avoid education “buzz” words. Describe how this program might change teaching and learning practice because of its innovative nature. Consider how your school’s program could be a model for others.

- Describe what this program will accomplish. Consider what this program might look like after one year, what would you like to accomplish? Indicate how you will get there in your narrative of the project. Put that in your evaluation section.

Your application should have the 4-page narrative application as indicated above, including the Capacity for Success and the Evaluation Plan. There should also be the listing of the equipment, following the sample spreadsheet in Appendix A. A total of the “bill” is required. The limit is \$14,000 in equipment and \$1,000 in professional development. A total of *no more than* 6-10 pages is requested.

Submission Process: Educate/Maker SPR2019

LETTER OF INTENT:

In order to provide technical assistance on this grant program it is a requirement that a letter of intent to apply be submitted prior to the proposal submission. The form of this “letter of intent” can simply be in email form and sent in the following manner to the individuals listed:

To: rose.wheeler@vermont.gov

CC: peter.drescher@vermont.gov

Subject Line: Educate/Maker Letter of Intent 2019

BODY OF EMAIL:

1. School:
2. Supervisory Union or District:
3. Main Contact Individual: (person writing the grant)
4. Email Address: (summer email AND school email if different)
5. Contact Phone Number: (to the individual)
6. School Phone Number:
7. Current Status of school in terms of a Makerspace:
 - School has an existing Makerspace with componentry already in place (briefly and generally list what is currently in place)
 - School has a developing Makerspace with the following existing componentry (list what is currently in place)
 - School has a space dedicated, but is only beginning to develop a program
 - School plans to develop a space but has not begun this process
 - School has no plans to develop a Makerspace
 - School does not have a Makerspace per se, but does “maker” activities in another fashion (describe briefly)

Availability for phone conference on January 28th at 3:30 PM EST? Y/N (it will be recorded) [Note: An invitation to the call will be sent upon receipt of your letter of intent. A link to the recording will be sent to all applicants after the 23rd.]

FINAL SUBMISSION:

You may email your four-page application and other materials (with proposal cover page on page 7) to the AOE staff identified below. Please include both email addresses. You will receive a confirmation upon receipt of your application. If you do NOT receive a confirmation within 24 hours, please email Peter Drescher directly.

To: rose.wheeler@vermont.gov

CC: peter.drescher@vermont.gov

Subject Line: Educate/Maker application

Application Deadlines: Your application should be received by Close of Business (4:30PM) on Friday, February 22, 2019. You may send it in .docx, .doc, .pdf or other word processing formats. Please do not send a link to a Google document. You may *create* in that format, but please export to one of the formats listed before submitting. Google submissions will not be considered.

For questions about this program, contact Peter Drescher, State Director of Education Technology at (802) 479-1169 or peter.drescher@vermont.gov.

Selection Process: All proposals will be read and scored by a small review panel of internal Agency of Education personnel. The rubric that will be used is listed in the scoring guide on page nine. Common high scores will be chosen through a reviewer consensus model. There will be two (2) awardee schools.

Scoring Guide: Educate/Maker SPR2019

| Guiding | Poor | Average | Excellen |
|---|--------|----------|----------|
| <p>Format - (10 Points)</p> <ul style="list-style-type: none"> • Does the application adhere to the formatting requirements on page 6? • Does the application include all elements required in sufficient length and detail? | 0 – 3 | 4 – 7 | 8 – 10 |
| <p>Program Description - (50 Points)</p> <ul style="list-style-type: none"> • Is there a clear “program” that the equipment will support? • Is the program innovative in its approach to curriculum and the integration of technology? Is the technology supporting learning? • Does the program address areas listed on the top of page 2? Which ones? • What standards and transferable skills are addressed? Does it support personalized, proficiency-based learning? • How is student creativity addressed? Are there specifics? | 0 – 17 | 18 – 35 | 36 – 50 |
| <p>Capacity for Success - (25 Points)</p> <ul style="list-style-type: none"> • Is infrastructure in place to successfully support this equipment? • Does the school meet the special considerations? • Is there sufficient staff resource to provide equitable and well-managed access to a Makerspace? • What other aspects of school/staff capacity lead reviewers to believe this can be successfully sustained? | 0 – 8 | 9 – 15 | 16 – 25 |
| <p>Evaluation - (15 Points)</p> <ul style="list-style-type: none"> • Are there evaluation components inherent in the project – are outcomes based in a measurable way? • Is the evaluation an evaluation of learning outcomes? • Are there at least two clear measures of success identified? | 0 – 5 | 6 – 10 | 11 – 15 |
| TOTAL SCORE (MAX IS 100) | | | |

Though reviewers may score in this manner, close or common scores will be determined by consensus by the review group.

Proposal Cover Page: Educate/Maker Spring 2019

| | | | |
|--|--|-----------------------|----------------------------------|
| School District and SU | (school where equipment will be delivered) | | |
| Contact Person | | | |
| Business Manager | | | |
| Phone | | | |
| E-mail | | | |
| Provide detail about the school as follows: | <u>Grade Spans</u> | <u>Current</u> | <u>Schools Enrollment</u> |
| Childrens' Internet Protection Act (CIPA) Certification | CIPA compliance is in place (Check one or more): <input type="checkbox"/> on school technology plans <input type="checkbox"/> on 2018 E-Rate application | | |
| Superintendent Signature | (this page can be emailed and scanned to expedite obtaining a signature – MUST be included in application) | | |
| Date | | | |

SAMPLE SPREADSHEET

Include other relevant items as you see fit, this is provided as an example.

| EDUCATE/MAKER PROPOSAL SPR2019 | | | | | | | | | |
|--------------------------------|------------------|----------------|--------------------|---------------------|--|--------------|---|-----------|---|
| School | Contact Person | Email | Phone | | | | | | |
| ITEMS FOR PURCHASE | Vendor | Purchase Price | quote in hand? Y/N | Vendor contact | Vendor email | Vendor phone | Vendor address for payment-- be sure to to include contact or other Addressee information | Account # | Other Detail--delivery method, what is included, etc. |
| MakerBot 400 3D Printer | Makerbot | \$ 3,000.00 | Y | Tim Makerguy | tmakerguy@mbot.com | 789-987-9876 | Makerbot, 1114 Bot Ave. Chicago IL 98765 ATTN: Tim Makerguy | | Delivery--2 weeks from date of order |
| Laser Cutter MCM 5000 | Laser Cutter Co. | \$ 8,998.00 | N | N/A online purchase | | 765-536-6534 | Amazon.com | | Amazon order-- Prime delivery 2 days from order |
| Little Bits 400 piece kit | Little Bits Co. | \$ 1,000.00 | Y | Online Purchase | N/A | | Little Bits | 233322 | Little Bits online |
| Makerbot Training Experience | Makerbot | \$ 1,000.00 | | | | | | | |
| Totals: | | \$ 13,998.00 | | | | | | | |
| NTE | | \$ 14,000.00 | | | | | | | |
| Professional Development | Makerbot | \$ 750.00 | Y | Tim Makerguy | tmakerguy@mbot.com | 789-987-9876 | Makerbot, 1114 Bot Ave. Chicago IL 98765 ATTN: Tim Makerguy | | To be delivered on date TBD |
| | Filament Express | \$ 250.00 | | | | | | | |
| Totals: | | \$ 1,000.00 | | | | | | | |
| NTE | | \$ 1,000.00 | | | | | | | |
| Grand Total | | \$ 15,000.00 | | | | | | | |