



# InvenTeams Grant

## Application Information

## **2020 Lemelson-MIT InvenTeam Grant**

**Initial Application Deadline: April 6, 2020**

**Apply Today**

The Lemelson-MIT InvenTeam® initiative offers an unparalleled opportunity for high school students to cultivate their creativity and experience invention.

InvenTeam students rely on inquiry and hands-on problem solving as they integrate lessons from science, technology, engineering, and math (STEM) to develop invention prototypes. Interactive, self-directed learning coupled with STEM curricula are essential for experiencing invention.

Students learn to work in teams, while collaborating with intended users of their inventions. They partner with organizations in their communities to enrich their experiences. Most of all, students learn to move forward through challenges and celebrate "Eureka!" moments.

After the InvenTeam experience, inventive cultures often continue to prosper at schools through further development of InvenTeam prototypes or the pursuit of new invention projects. You can learn more about the community impact by reading our case studies [SOAR High School](#) and [KIPP Sunnyside High School](#).

### **Invention Cycle**

As a grants initiative, InvenTeams work on a yearly cycle, though any young inventor could follow the same timeline. The grant period runs from October - June corresponding with the academic year. Each InvenTeam creates an individual path due to project variation, but most experience the cycle through three phases:

#### **Concept phase**

- Gather additional research about users' needs, competitive products, and existing patents
- Brainstorm ideas for appropriate solutions

#### **Design Phase**

- Conceptualize several solutions
- Investigate the feasibility of each solution

- Select the best solution
- Create a detailed design using tools, such as [SolidWorks 3D CAD software](#)
- Determine materials and resources, considering [Sustainable Design](#)

### **Build Phase**

- Construct and test prototypes
- Field test prototypes
- Build alpha prototype

### **Expectations**

InvenTeams access information and resources through a private portal on the Lemelson-MIT Program's website where they also manage their finances and submit reports. Lemelson-MIT Program staff and Lemelson-MIT Program Fellow visit each InvenTeam at its school during the grant cycle.

### **Reporting and Documenting Work**

InvenTeams post updates and share photos and videos of their work on each InvenTeam's website. Many will also engage media to publicize significant milestones. InvenTeams have two major milestones to report progress on their invention:

1. **Mid-Grant Technical Review:** InvenTeams host open houses in February to show the technical progress to mentors, technical experts, and users.
2. **Final Summary Presentations and Reports:** InvenTeams present a summary of their work at EurekaFest. Presentation sections include: motivation, technical overview, team process, and next steps.

### **Celebrating the InvenTeam Experience**

Students, teachers, and mentors representing each InvenTeam travel in June for the Lemelson-MIT Program's EurekaFest, a multi-day celebration of the inventive spirit. InvenTeams present and showcase their prototypes at EurekaFest's public exhibit. [Lemelson-MIT Student Prize](#) winners, MIT faculty, and other teams offer feedback and inspiration during EurekaFest.

True success for each InvenTeam is students having fun throughout the grant cycle while collaborating to build a useful and unique device that positively impacts the lives of others.

Up to 15 teams nationwide are selected each year as InvenTeam grant recipients. The application is a **two-step process**.

### **Step 1: Initial Application: Due April 6, 2020. [Apply Today!](#)**

The initial application is available online each October and due at the beginning of April for grants to be awarded for the following academic year. **The initial application for the 2020-2021 school year is due April 6, 2020.** It includes:

1. Educator and high school information form
2. Invention idea project proposal
3. Educator's invention interest statement
4. School administrator's letter of support for Educator's application
5. Educator's current resume or CV plus resumes of supporting educators
6. Special consideration (optional)
7. Educator and high school information form
8. Invention idea project proposal
9. Educator's invention interest statement
10. School administrator's letter of support for Educator's application
11. Educator's current resume or CV plus resumes of supporting educators
12. Special consideration (optional)

Applications are assessed on project planning, student organization, and potential for community partnerships and other types of collaboration. A strong application is sophisticated and prepared with student assistance. It demonstrates the educator's ability to facilitate a self-directed, hands-on learning project that spans an entire school year. The letter of support from the school's administration should enthusiastically endorse the educator and the potential of an InvenTeam opportunity for the school.

Teams of two or three educators are encouraged, but a lead educator must be designated for a team.

- Educators are expected to document school and community support for year-long invention projects and the ability to identify and solve real-world problems with a team of students.
- Educators selected as finalists receive access to training webinars, coaching, and technical support in order to develop a competitive final application.

## **Grantee Selection Process**

A panel comprising inventors; educators; InvenTeam student alumni; and MIT faculty, staff, and alumni reviews the applications. Diversity is considered among school types, community demographics, and project themes. Up to 35 educators are selected as finalists from the initial applications.

## **Youth Involvement**

Educators often begin the initial application with minimal youth participants. Youth input is encouraged for the initial application and required for the final application. Many educators recruit youth early to develop a stronger proposal for the initial application.

## **Invention Ideas**

InvenTeam projects span many fields like assistive devices, environmental technologies, consumer goods, and wearable technology. Inventors are encouraged to identify important problems in their own communities. Local problems tend to highly motivate youth as they create technological solutions to improve the lives of others.

Review [past InvenTeams](#) and their invention projects for inspiration.

## **Step 2: Final Application**

- Only InvenTeam finalists from the current year are invited to apply.
- Final applications focus on the invention project and require student input to present:
  - Invention project description
  - Background research including a patent search
  - Project and team organization plan
  - Budget to build the invention
  - Community engagement plan
- All teams are expected to present and showcase a working prototype of their invention at EurekaFest in June of their grant year.
- All teams are expected to hold a mid-grant technical review to demonstrate their progress and gather important feedback from beneficiaries and community stakeholders.
- All teams are expected to comply with the administrative guidelines outlined by the Lemelson-MIT Program, which include financial reporting, adhering to program deadlines, and external communications.

## **2020-2021 InvenTeam Grant Timeline**

- Initial application opens: **October 23, 2019**
- Initial application deadline: **April 6, 2020**
- Up to 35 educator finalists announced: **Mid-April, 2020**
- Finalist teams develop their final applications: **Summer 2020**
- Final application deadline: **September 8, 2020**
- Up to 15 InvenTeams announced: **October, 2020**
- Invention development by InvenTeam grantees: **October 2020-June 2021**
- EurekaFest 2020 for InvenTeam grantees: **mid-June 2021**

## **Frequently Asked Questions**

### **Who may apply for an InvenTeam grant?**

Science, technology, engineering, and mathematics educators at high schools and non-profit educational organizations. An educator and/or a school who has received an InvenTeam grant must wait three grant cycles before applying again.

### **What is the size of an InvenTeam?**

Optimal size, 10-15 high school youth

### **How many grants are available?**

Up to 15 teams each school year

### **How much is the grant?**

Up to \$10,000 each

### **How are the funds to be used?**

Funds may be allocated for research, materials, and learning experiences related to the project. Funds may not be used to purchase capital equipment or professional services (e.g.: intellectual property legal protection, engineering services).

### **What about fellowships?**

Educators who facilitate the project outside of the school day may allot up to \$3,000 of an InvenTeam grant towards fellowships.

**Who funds the InvenTeam initiative?**

The Lemelson-MIT Program awards InvenTeam grants and manages the initiative. The Lemelson-MIT Program is funded by [The Lemelson Foundation](#) and is administered by the [School of Engineering at MIT](#).

InvenTeams are encouraged to partner with organizations in their local community for additional donations and resources. Local partnerships are necessary to raise funds for the team to travel to EurekaFest and help sustain invention projects after an InvenTeam grant.

**How many students participate on an InvenTeam?**

There is no size requirement for InvenTeams. An InvenTeam can be comprised of a small group of students as an extracurricular activity or an entire class. Teams with fewer than five students or more than 20 students can be challenging. Ten to 15 students on an InvenTeam are productive and manageable.

**What is the educator's role on an InvenTeam?**

The educator applies for the grant. The educator also recruits students, monitors funds, and supports students throughout the process. The educator is advised to work with students in the spirit of self-directed learning. Consider the educator as a coach on a sports team or director of a musical ensemble.

**How may the grant be used?**

The grant may be used to purchase materials and supplies necessary for the discovery process and expenses related to product development and team-building efforts (including snacks, meals, and team polo shirts). Funds may be used for an unrestricted teacher fellowship of \$3,000 if the project is conducted as an extracurricular activity or club. Funds may not be used to purchase capital equipment such as computers, pay for professional services, or substitute educators.

**What are the grantees' obligations to ensure funding throughout the cycle?**

Each InvenTeam is required to submit progress and expense reports on scheduled dates throughout the grant's cycle, culminating with a summary presentation and report that details process and design, addresses the viability of its invention, and discusses next steps. Each InvenTeam is also required to present and showcase a working prototype of their invention during the Lemelson-MIT Program's annual EurekaFest event.

**Does the Lemelson-MIT Program cover EurekaFest costs?**

No. Travel expenses will require fundraising. The Program will cover room and board for eight team members (six students and two chaperones).

**Is the InvenTeam initiative a competition?**

No, the initiative is not a competition once grantees have been selected. The InvenTeam initiative relies on a collaborative approach to build problem-solving skills and foster creativity, which is essential to invent. InvenTeams display and discuss their prototypes with each other and award-winning inventors at EurekaFest.

**How can InvenTeams receive external support?**

InvenTeams are encouraged to seek industry, academic, or civic partners in their community to help implement their projects. Involving partners that have experience inventing can be invaluable. Lemelson-MIT Program staff will assist in identifying mentors, including MIT alumni, to help advise InvenTeams on their projects. The InvenTeam website provides resources and materials made available from partners.

**How are InvenTeam applications evaluated?**

Initial applications are evaluated relative to the capacity of the educator(s) and school to support the project. The final selection is based on the inventiveness and feasibility of the proposed technical solution to a real-world problem. MIT professors and staff, inventors, researchers, entrepreneurs, and high school educators assess the applications.

**How long have InvenTeam grants been awarded?**

The Lemelson-MIT Program awarded its first InvenTeam grants to three New England high schools during the 2002-2003 school year. It became a national initiative during the 2003-2004 school year. On average, 15 InvenTeams receive funding each school year. 243 InvenTeams have been funded through the 2019-2020 grant cycle.

**Who are Lemelson-MIT Program Fellow?**

Fellows are a select group of experienced InvenTeam educators who provide peer-to-peer support for InvenTeam educators during their grant year. Read more about them [here](#).