



# FAQ v9

**Question:** Can students work in teams on their invention or must the inventors work alone?

**The CIC Response:** In the real world, engineers and inventors almost always work in teams because that is the best way to coordinate and multiply their individual strengths to create the best product. However, in the CT Invention Convention, the goal is not to create the best product, but to enhance and improve the skills of the individual students. The CIC uses the inventing process to accomplish this task. The real goal of the CIC is not the invention, but the skills and abilities that the student gains by being an inventor.

This means that there are certain parts of the inventing process that the student may struggle with, and it is through that struggle that they get better at the task. Having a partner who already has that skill may result in a better product, but will not improve the student’s skill, which is the ultimate goal.

Thus to ensure the greatest improvement in an individual student’s skills, abilities and aptitude, the CIC program requires all inventors to work on a projects as individuals.

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**Question:** What happens if the student fails at creating a working invention.

**The CIC Response:** How you record the incompleteness of a working invention within your school grading system is up to you, but from a CIC point of view, even if the student did not officially complete the invention process, the experience is still not a “failure.” No matter what happens, the student will have still learned from the process and from watching their classmates struggle also. The important thing to remember is that the goal of the CIC program is not the invention, but the process.

When Edison was asked how he felt after performing 20,000 experiments to create the storage battery, none of which worked, he replied that he felt great because now he knew “20,000 things that don’t work.”

Every single person falls off the bicycle the first time they try to ride. There is no shame in falling off. The only shame is in not trying or stopping before they finally succeed.

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**Question:** Why does the student have to complete the Invention Log? Why can’t they just make something?

**The CIC Response:** The goal of the CIC program is NOT the “invention”, but to have the student learn the process of problem-solving and creation. The Invention Log walks the student through the step-by-step process of problem-solving. Getting a good solution to an issue is not random or spontaneous, but rather a planned organized process. Putting something together without a plan or documentation is not inventing, it is just tinkering and when you are done, you have nothing of any value. In the real-world you must also be able to explain what you’ve done, how you’ve done it and why you did it that way and that is that the Invention Log shows the student how to do. There is a famous quote by Edison that sums up the issue: “If an idea is not recorded and can not be studied by others, it does not exist.”

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**Question:** Can a student use a CAD computer program to design and a Rapid-Prototyping machine to make a part for the invention?

**The CIC Response:** Yes, CAD software and 3D Printers are merely the latest technologies that are being used in the real-world and their use is certainly allowed (and even encouraged).



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## Question: What happens if the invention costs more than the \$50 limit?

**The CIC Response:** The purpose of the \$50 limit on the invention is to encourage creativity by having the students make and shape what they need and discourage students from simply buying simple parts and components off the shelf. One method is to recycle and reuse as much as possible.

Using recycled and scrap materials from home, is a perfect plan. The value of scrap material is exactly what they paid for it, i.e., zero. It is scrap. It was going to be thrown away and they have recycled it into a new invention. Perfect!

Another example is if the student is going to build an alarm attached to a door, they do NOT have to include the cost of the door, let alone the house, in the cost of the invention. The cost of the invention is just the added parts, i.e. wire, switches, battery, etc.

The truth is that depending on what they are making, they will probably have to buy some stuff, but nobody will ask for a list of receipts or run a cost analysis on their invention.

Thomas Edison once said, "All you need to be an inventor is a good imagination and a big pile of junk." Your student already has the imagination, now all they have to do is find the junk.

In any case, the cost of the display board does NOT count in the cost of the invention.

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## Question: Can an App programmed on an electronic device be used as the invention?

**The CIC Response:** The goal of the CIC program is not the actual device, but the creative, observational and analytical processes the student goes through to create a functioning device. While it is possible to get a patent on software, the creation of an App is more aligned to the writing of a story than the physical creation of a working device. The writing of an App is strictly an intellectual activity and does not involve the physical, hands-on, real-world aspects and issues of dealing with real materials and forces that the CIC program is hoping the students will become aware of, address and overcome. However if the App is on a device that is then connected or interfaced to the real-world and does something physical, then that system is acceptable. Please see the App & Microcontroller Info sheet for more specifics about what is required.

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## Question: How large can the invention be?

**The CIC Response:** The inventions are allowed a space of 2 feet by 2 feet on the tabletop in front of the Display Board. If the invention is too tall to fit safely on the table, you are allowed to put it on the floor in front of the Display Board. However, if the invention is larger than 2 x 2 feet, it will not be allowed to be displayed at the event. In that case, the inventor should either make a scale model of the invention to show its operation, limit how much of the invention is brought in and/or show pictures and/or videos of the full size invention being used in the real-world. For example, if an invention is used on the handlebars of a bicycle, you need not bring in the entire bike. Bringing in the handle bars would be sufficient so would showing pictures of the invention on the bike.

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## Question: Can an electronic display device be used to provide information about the invention?

**The CIC Response:** The use of an electronic display device (computer, mobile phone, tablet, etc.) is allowed during the Judging Circle. However, the student must still create the Working Invention, Display Board, and Invention Log, in addition to presenting their invention verbally during the Judging Circle process. The electronic display device can only be used to supplement that other information. The electronic device cannot be used in place of those other requirements. In addition, by using such a device, the inventor and their family agree that they are fully responsible for the safety of that device at all times and the CIC is NOT responsible in any way or under any circumstances for any damage or theft of that device.