



INVENT FUTURE
GLOBAL

SUMMER CHALLENGE

STUDENT GUIDE

**IDEA
CHALLENGE**

**INVENTOR
TALK**

**INVENTION
CONVENTION**

11 JUL 2020	Project Information Upload Deadline - Idea Challenge
18 JUL 2020	Idea Challenge Event
25 JUL 2020	Project Information Upload Deadline - Inventor Talk
01 AUG 2020	Inventor Talk Event
08 AUG 2020	Project Information Upload Deadline - Invention Convention
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Intro

InventFuture.Global (IF.G)

InventFuture.Global (IFG) is a global educational program initiated by educators in United States, China, United Kingdom, Canada and Singapore. The IF.G mission is to support and enable students to develop and improve their problem-solving skills so that they will be able to handle and overcome the many problems and issues that they will face in their adult lives and careers, and to inspire young people to become innovators, inventors and entrepreneurs.

IF.G makes participation in international Invention Education events and programs possible for every student in every country. Using the latest online equipment and technology, the IF.G program will eliminate the international travel negatives, while maintaining most of the value of the event positives. With Invent Future Global, Invention Education will truly be a global educational experience. Educators and students from more than 8 countries have already participated in IF.G online events.

Summer Challenge

IF.G Summer Challenge Events consists of three different online activities that students can participate in

- Idea Challenge
- Inventor Talk
- Invention Convention

Students across the world will be invited to pitch online and communicate with their peers and judges from the United States, United Kingdom, China, Canada, Singapore, Indonesia, Chile and other countries.

Why is it important?

At the heart of IF.G Summer Challenge events is STEMIE education, which recognizes the foundational skills that Science, Technology, engineering and Math create in combination with Invention and Entrepreneurship learning. STEMIE education prepares students for the needs of 21st-century economy, creating critical thinkers and problem solvers and empowering a new generation of innovators.

The IF.G Summer Challenge also provides students with an international platform to communicate, collaborate and learn from students and educators from different countries. Along the way, students will become part of global ecosystem that allows them to gain new skills, friends, recognition and perspectives.





The Idea Challenge Event

THEME TOPIC: What troubles you or the world most on a rainy day?
What is your solution?

This event focuses on Problem Identification/Ideating and Communication. Targeted at the designated theme topic - what troubles you and the world most on a rainy day, student inventors will present the problem they intend to solve, the research they have done and their solution to the problem.



The Inventor Talk Event

What is your favorite invention?

Students participating in the Inventor Talk event are required to conduct a 3-minute presentation on their favorite invention and how this invention has impacted our lives or inspired them. Ideally, students should be able to identify the problem that the invention has solved, the key steps the inventor undertook to make the invention work, including how the inventor overcome initial failures (if any). The main objective of this challenge is to help students understand process of inventing and the qualities that make an inventor.



The Invention Convention Event

Students need to have an invention or prototype to participate this event. In IFG Online Judging Circle, students will present the whole inventing process of their own.

Before going through guideline chapters of Idea Challenge event, Inventor Talk event, and Invention convention event, you should read following chapters carefully for all Summer Challenge events:

- General Rules
- General Guidelines
- How to Join the Online Event?
- Frequently Asked Questions



IF.G Summer Challenge

General Rules

About the Online Challenge

Summer Challenge Event will be an online activity organized by IF.G. Participating students from different countries will pitch online using **ZOOM**. The official language is **English**.

Eligibility and Student Registration

Summer Challenge events are invitation-based events with limited seats. Students from age 9-14 are eligible to register with their local IF.G members via their program. For details, please contact your local IF.G member. This registration is open to either individual participants or teams.

Teams

- Teams should consist no more than 3 students.
- All the members in a team need to fully contribute to their project.
- A team needs to upload only one presentation slide set for their project.
- All team members are required to join the online event, preferably from the same location.

Each student can join the event with only one identity: either as an individual, or a member of a team. No students can join both as an individual and in a team.

Teams will participate in the same judging processes as individuals, Rules for teams will mirror those of the individuals. Students will be judged in IF.G online judging circles.

Award

Awards for Idea Challenge Event

- Best Pitch
- Most Innovative Idea

Awards for Inventor Talk Event

- Best Pitch
- Research Award

Awards for Invention Convention Event

- Best Pitch
- Most Innovative Invention



All Award

All award winners will be invited to present at the Global Innovation Field Trip (GIFT) by Innovation World (US) which is a 24-hour online multi-country collaboration that celebrates young innovators and educators around the world. More than 80 presenters from 13 countries participated in its inaugural event in May 2020.

The Most Innovative Ideas and the Most Innovative Invention

Winners of the Most Innovative Ideas and the Most Innovative Invention will have their inventions showcased in the Invent Future Global online gallery (<https://inventfuture.global/ifg-innovators/>).

Winners will also be invited to speak at the 2020 China Invention Convention / Invent Future Invention Convention Online Event on 11-18 October 2020. Winners will have the opportunity to inspire Chinese student inventors with their ideas and/or inventions.

IF.G Recognized Innovator Certificate

IF.G Recognized Innovator Certificate will be issued to all student participants.

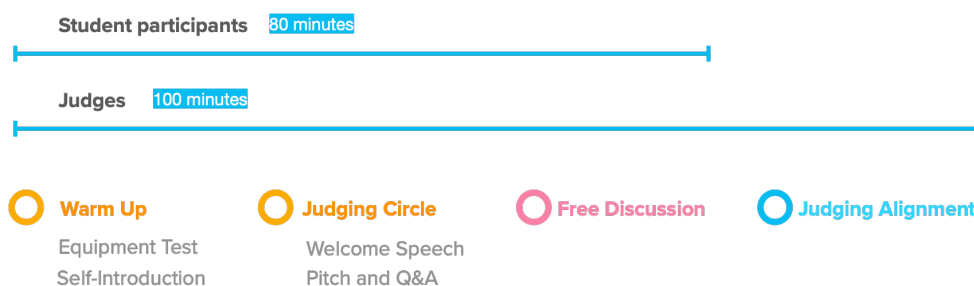
Judging Process

Before the event, all students will upload their project materials. This will include a short description of the project and a 6-page (maximum) presentation slide set. Judges in the same judging circle will review these materials before the event.

During the event, the whole process will be 1.5 hours long for students, including warm-up activities, online judging circle, and a slot for student discussion. All registered students will take part in the online judging circles – including peer review using Zoom video conference. Each student will pitch to the other students and judges. Both judges and students may ask questions to students who are pitching. Each student or team will have three minutes to pitch their solution, and five minutes to answer questions, from both peers and judges.

After all the projects are presented, judges will join a separate alignment session, to evaluate the performance of each student or team, according to the judging criteria.

Usually there are 6-8 students/teams, 3 judges, 2 moderators, and limited visitors in a single online judging circle.



IF.G Summer Challenge

General Guidelines

What are the judges looking for?

Please read event rubric carefully! The judges will judge your online pitch and presentation slides based on the rubric and your ability to communicate the key components of your project.

What is the purpose of your presentation slide set?

- Your presentation slide set will be judged against different IF.G Summer Challenge event rubric, which you can find in different event guideline session in this Student Guide.
- Your slides will be presented during the pitch, so that you can use it to help your pitch.

What if I worked as a team?

- All students in the team must take part in online judging circles.
- The team will have three minutes to pitch their solution, and five minutes to answer questions, from both peers and judges.
- Teams can either choose one member to give the pitch, or do the pitch together by sharing different parts.
- Judges can designate a team member to answer questions during the Q&A.
- Only one presentation slide set is allowed to be shared during the pitch.
- Team members are highly recommended to be in the same room and show up in the single ZOOM window (computer) to join online judging circle. All team members' faces need to be clearly shown in the ZOOM window. If team members can not get together physically, they can join separately at their own place using their own computers.

Language and Translation

If student/team's native language is not English. A translator can be invited by the student/team to help translate the questions during the Q&A. Student/team can also ask moderators or judges in the judging circle to help with the translation if they are from same country and have same native language.

- Presentation slides must be in English.



- Student/team must do the pitch by themselves in English.
- During the pitch, if the student/team could not understand questions from judges or other students in Q&A, only the question itself is allowed to be translated. Student/team MUST answer all questions in English.
- Read Event Rubric carefully, and be prepared to answer questions. To help you prepare, you might want to write down some of the important parts of your answers so that you have them when you practice giving your presentation and Q&A.

Helpful hints

When preparing your slides:

- You can take pictures of your drawing, writing, and place the photos into the slides.
- If you are new to slide making software, you can ask your teacher or parents to help you, and learn from them.
- You can create your presentation slide using any software you are used to. When submitting your project information to IFG website, you will be required to upload either a powerpoint (.pptx) or pdf (.pdf) file of your presentation slides.

In your slides, be sure you use:

- Fonts that are readable (style, size, color)
- Colors that look good together
- Shapes that are the right size
- Correct grammar and spelling
- Proper punctuation
- Professional posture.
- Enthusiasm, passion, inflection, appropriate body language.

In the pitch, you can show materials you think might be helpful in your pitch.

- When you show the material to judges, make sure it is in the center of ZOOM window.
- If you want to show details of the material, you can move it closer to your camera so that it will be shown clearly.

In the pitch, be sure you use:

- Courteous and professional language to peers in judging circle.
- Concise, appropriate pace, clearly heard and understood.



IF.G Summer Challenge

How to Join the Online Event?

Download ZOOM software (Zoom Client for Meetings), install it in your computer. Download link: <https://zoom.us/download> (Select Zoom Client for Meetings)

To join a ZOOM meeting,



Join a Meeting

Sign In

1. Open ZOOM, click "Join a Meeting"

Verify Phone Number

+86

Enter 6-digit Code

Verify

By joining the meeting, I agree to the [Privacy Policy](#)

3. You will be asked to input your mobile number for a 6-digit code, if you are not logged in as a ZOOM user.

Join Meeting

Meeting ID or Personal Link Name

Your Name

Remember my name for future meetings

Don't connect to audio

Turn off my video

Cancel Join

2. Type in ZOOM meeting ID, and your full name. And later you will be asked to input meeting password.

Phone Call Computer Audio

Join With Computer Audio

Test Speaker and Microphone

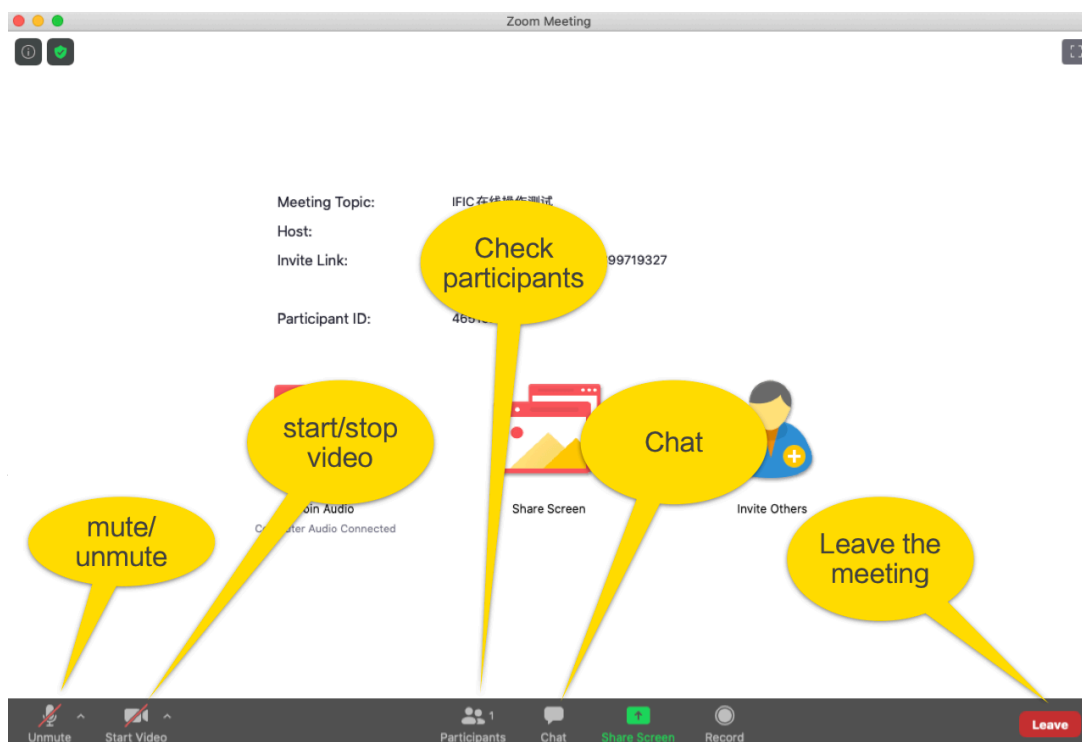
4. Select "Join with Computer Audio" to join the meeting.

You will receive the ZOOM meeting ID and password of your online judging circle before the event. Make sure:

- You change your name to your full name. Please do not use any nick name or abbreviations.
- You have an appropriate background. People will be able to see what is behind you and it should not be distracting or inappropriate.
- Pick a well lighting and quiet place without external noise or sounds. Lighting should be facing you and not behind you.
- You have a stable internet connection. If possible, try to get a stronger WIFI signal and faster WIFI connection.
- Log in at least 15 minutes early.
- Use computer with a camera to connect, do not use mobile phone.
- Use an external microphone if possible. So that to ensure a better voice quality.
- Ask an adult by your side, in case you need support to use the computer and ZOOM.



Useful Zoom Functions



- **Mute / unmute:** moderator may ask you to mute/unmute yourself when other students are presenting, or unmute yourself when you are going to pitch.
- **Start video / stop video:** moderator may ask you to start/stop your video when judging circle begins.
- **See participants:** you will see all participants in the judging circle, including moderators, judges, other student participants, and visitors.
- **Chat:** you can leave your questions or messages in chat window when others are pitching. You can also use chat function to inform moderators if you have any questions.
- **Share Screen:** you will use this function to share your presentation when your pitch begins.
- **Leave the meeting:** when the judging circle is over, use this button to leave the event.



IF.G Summer Challenge

Frequently Asked Questions

Q: Can I use a script to pitch during online Judging Circle?

A: While you may use notecards or a script in your pitch, a full script is definitely NOT recommended. You can use your presentation slides as a guide.

Q: My native language is not English, can I have a translator sit beside me during my pitch?

A: Yes, you can have a translator to help translate questions from the judging circle. But you have to finish your own pitch by yourself in English, and you have to answer all questions by yourself. Translators are not allowed to answer questions or translate your answers. The time cost on translation will also be included in 5 minute Q&A.

Q: What would the judging look like?

A: In Summer Challenge event, 2 moderators, at most 8 projects in same grade range, and at least 3 judges are in the same judging circle. The process of judging circle usually is 1.5 hours long for students, including warm up activity, judging, and student free discussion. Student will give a 3 minute pitch , and use another 5 minutes to answer questions from judges and other students in the same judging circle.

Q: I have successfully uploaded my project information? How can I join the event?

A: After you upload all required project material, you will receive an invitation including the time and the Zoom meeting ID from the IF.G organizer. Please get prepared for the pitch and join 10 minutes earlier to the session so that you have enough time to adjust your settings and get familiar with the others.

Q: Who will control my slide show when I am doing the pitch?

A: The moderator will share your slides when it is your turn to present. You can ask the moderator to go next/previous page during the process.

Q: Do I need to prepare the slides completed by myself? What if I don't know how to make a slides?

A: You are supposed to prepare all the CONTENT in the slides that you will use in the pitch (e.g., texts, photos, drawings, design charts etc.). However, in case you do not know how to create a slide set, you can ask for help from your teacher or parents. The skills needed for PowerPoint or other kind of slides making is not a must in the judging criteria.

Q: I don't have Microsoft PowerPoint, can I use google slide?

A: Yes, you can use any software or online platform to complete your slides. After you finished your slides, you need to export your slides to pptx or pdf file which will be uploaded to event information form.



IF.G Summer Challenge

Idea Challenge Guide

What troubles you or the world most on a rainy day? What is your solution?



Targeted at the designated theme topic - what troubles you and the world most on a rainy day, you will present the problem you intend to solve, the research you have done and your solution to the problem.

Date 18 JUL 2020

Eligibility

Expect eligibility listed in General Rules of this Student Guide, before the event, you must have

- Finished a solution design to solve the problem identified on a rainy day. The problem should be a real world problem. And your solution should be either new and original, or an innovation based on something that already exists. A working prototype of the solution is not required.
- Completed a presentation slide set containing the whole process from identifying a problem on a rainy day to generating a solution from all possible solutions. The slides should be NO MORE THAN 6 pages. The language used should be ENGLISH.

Information to be uploaded before the event

To participate Idea Challenge event, you should submit following information on <https://inventfuture.global/summer-challenge/idea-challenge/> before 11 Jul 2020:

- Your Unique Identify Code (UIC).
- Participant's information, includes time zone, name, gender, grade, country, city, parent name, and Email.
- Project information, includes problem your solution solves on a rainy day, the name of your solution, description of your solution, and the presentation slides ppt(x) or pdf file.

You will find following sessions in Idea Challenge Guide

- Rubric
- Online Pitch Guidelines
- Presentation Slide Set Guidelines



IF.G Summer Challenge - Idea Challenge

Rubric

Invention Process

Description

Identifying and Understanding

The identifying stage is where inventors seek or find a problem that they want to solve. It is important to ask inventors how they uncovered this problem and who else might experience the same problem and to what end.

Understanding a problem refers to the research that an inventor has done to understand what else exists to solve the problem as well as the full impact the problem may have on others.

Ideating

Ideating refers to the brainstorming or imagination stage that a student goes through to generate original ideas and begin to develop idea/s into specific requirements to determine the likelihood of success.

Invention Impact

Description

Market and Value

How large and/or viable is the potential market? To what extent did inventors research the market?

Do inventors clearly summarize why a consumer or user should buy or use their solution? This statement convinces a potential (or future) consumer that one particular product or service will add more value or better solve a problem than other similar offerings.

Do inventors consider the potential environmental, societal, and other impacts of the solution? How does the solution improve environmental & social conditions or have a minimal adverse impact?

Originality

Is the solution unique, novel, and creative? Is it distinguishable from prior solutions and those of his/her peers? To what extent inventors contribute to the originality of their solution? Do inventors clearly state the advance and value of the solution based on their research on similar existing solutions?



Communication	Description
Presentation Slide Set	<ul style="list-style-type: none"> • Does the presentation slide set have strong visual appeal? • Is the slide eye-catching with color, pictures, graphs and variety? • Is grammar, spelling and punctuation correct? • Does the slide communicate significant aspects of the invention process from identifying to ideating?
Live Pitch and Q&A	<p>The live pitch and Q&A takes place during the IF.G Summer Challenge event. The best pitches include the following:</p> <ul style="list-style-type: none"> • Introduction: solution name, inventor's name, country, grade, etc. • An overview of all invention process elements outlined in the criteria (above). • Use and/or reference presentation Slide set. • Explanation of origination of the idea (helping to assess the originality). • Other recommendations include: <ul style="list-style-type: none"> - Courteous and professional to peers in judging circle. - Concise, appropriate pace, clearly heard and understood. - Professional posture. - Enthusiasm, passion, inflection, appropriate body language. - No reading from cue cards; explanation in own words. - No longer than 3 minutes.



IFG Summer Challenge - Idea Challenge

Online Pitch Guidelines

Rules

- All pitches must include Introduction: solution name, inventor's name, grade, and country.
- The pitch should be no longer than 3 minutes.
- The pitch should cover all the invention process outlined in the criteria.
- The pitch must address the originality of your solution and the research you have done to discover what makes your solution an original or an improvement on a product that already exists.
- Student/team will use and/or reference presentation slides during their pitch.

Helpful hints

- Begin with introductions. Each student should introduce their name, grade, country, and name of their solution.
- Be sure to talk about significant aspects from identifying a problem on a rainy day to generating a solution from all possible solutions.
- Your pitch must address the originality of your solution and the research you have done to discover what makes your solution an original or an improvement on a product that already exists. What challenges did you encounter? What research did you do? Read the rubric carefully to make sure you address all criteria!

You may also want to talk about:

- How did you come up with the problem on a rainy day?
- What people, situations, or conditions does this problem affect?
- What is the result you are trying to achieve?
- What are some other possible solutions you considered? How did you decide your final solution? How did you come up with the solution?
- What research did you do to see if this solution had been done before? How is your solution different from and better than other existing solutions? Who did you talk to? Where did you look? What websites or other resources did you search?
- What is the function of your solution?



- How will your solution solve the problem? How will it help others?
- What techniques might be in your solution?
- Who helped you with the solution, and what did they help you do?
- Any other information about the solution that will help explain it, what it does, or why it is good.

Frequently asked questions during Q&A

- What problem are you trying to solve with this solution?
- How does your solution work?
- Who are you trying to help with this solution?
- Does your solution help the world or just a few people?
- What impact on the environment do you think your solution will have?



IF.G Summer Challenge - Idea Challenge

Presentation Slide Set Guidelines

Rules

- The presentation slides set should contain significant aspects from identifying a problem on a rainy day to generating a solution from all possible solutions.
- The presentation slides should be no more than 6 pages.
- The language used in the slides must be ENGLISH.
- Your presentation slides set MUST have:
 - Student(s) Name(s)
 - The name of your solution
 - Student(s) Grade(s)
 - City, Country
 - The problem you are trying to solve on a rainy day

Helpful hints

You might also want to add some of the following:

- How did you come up with the problem?
- What people, situations, or conditions does this problem affect?
- What is the result you are trying to achieve?
- What are some other possible solutions you have considered? How did you decide your final solution? How did you come up with the solution?
- How is your solution different from and better than other existing solutions? What research did you do to see if this solution had been done before? Who did you talk to? Where did you look? What websites or other resources did you search?
- What is the function of your solution?
- What techniques might be in your solution?
- Text which supports and explains any pictures, drawings, charts, etc.
- Any other information about the solution that will help explain it, what it does, or why it is good.



IF.G Summer Challenge

Inventor Talk Guide

What is your favorite invention?



What is your favorite invention in human history (including your own invention)? Why is this invention so important? Pitch with worldwide student inventors on your favorite invention, highlighting the specific considerations such as the inventing process and impact of this invention.

Date 01 AUG 2020

Eligibility

Expect eligibility listed in General Rules of this Student Guide, before the event, you must have

- Completed a research on their favorite invention.
- A presentation slide set. You need to design a presentation slide set about your favorite invention.

Information to be uploaded before the event

To participate Inventor Talk event, you should submit following information on <https://inventfuture.global/summer-challenge/inventor-talk/> before 25 Jul 2020:

- Your Unique Identify Code (UIC).
- Participant's information, includes time zone, name, gender, grade, country, city, parent name, and Email.
- Project information, includes the name of your favorite invention, the problem it solves, the reason you favor it most, and the presentation slides ppt(x) or pdf file.

You will find following sessions in Inventor Talk Guide

- Rubric
- Online Pitch Guidelines
- Presentation Slide Set Guidelines



IF.G Summer Challenge - Inventor Talk

Rubric

Understanding the Invention Process

Description

Identifying and Understanding

Students understand what the problem that their favorite invention solves, how the inventor uncovered this problem and who might experience the problem and to what end.

Students should do research to understand the full impact the problem may have and what else exists to solve this problem.

Ideating

Students should have conducted research on how the inventor discovers, develops or use new science, technologies and/or other concepts in their invention to solve the problem.

Designing & Building

Students should be able to articulate how the invention works and why the inventor chose the materials for executing the invention.

Testing & Refining

The best inventors know that the first build is often not the best and seek feedback through testing and refine their design accordingly. The student should understand the iterations, improvements and perseverance of this invention.

Understanding the Invention Impact

Description

Market and Value

Students should summarize clearly why the invention was (will be) a commercial success – i.e. why users will buy and use the invention. Students should also discuss how the invention impacts the environment, society or increases the quality of lives etc.

Originality

Students should clearly summarize why the invention is unique, novel, and creative. Students should clearly state the value of the invention based on their research on similar existing inventions.



Communication

Description

Presentation Slide Set

- Slides are visually appealing.
- Slides are eye-catching with color, pictures, graphs and variety.
- Slides have clear messages.
- Grammar, spelling and punctuation is correct.
- Slides communicate significant aspects of the invention.
- Slides support the pitch.

Live Pitch and Q&A

The live pitch and Q&A takes place during the IF.G Summer Challenge event. The best pitches include the following:

- Introduction: Favorite Invention name, participant's name, country, grade, etc.
- An overview of all invention elements outlined in the criteria (above).
- Use and reference presentation slide
- Other recommendations include:
 - Be courteous and professional to peers in judging circle.
 - Be concise, speak at an appropriate pace, make sure you are clearly heard and understood.
 - Have a professional posture.
 - Show enthusiasm, passion, with appropriate body language.
 - try not to read from cue cards; but rather practice your pitch and explain using your own words.
- No longer than 3 minutes.
- Understand the questions and answer them confidently and effectively.



IFG Summer Challenge - Inventor Talk

Online Pitch Guidelines

Rules

- All pitches must include Introduction: favorite invention name, student's name, grade, and country.
- Your pitch should no longer than 3 minutes.
- Your pitch should present your favorite invention elements outlined in the criteria.
- The pitch must address the research you have done to understand the value of the invention, and how the invention was created.
- All pitches must have presentation slides.

Helpful Hints

- Begin with introductions. Each student should introduce their name, grade, country, and name of their favorite invention.
- Your pitch must address the value of your favorite invention, the research you made to understand the value and how the invention was created.
- Be sure to present the inventing process that you researched of your favorite invention. What challenges did the inventor encounter? What changes did the inventor make and why?

You may also want to talk about

- How did the inventor come up with the idea for this invention?
- What people, situations, or conditions does this problem affect?
- How did the inventor create the invention?
- Who helped you with your research on your favorite invention?
- What changes might you want to make to your favorite invention?

Frequently asked questions during Q&A

- Why is this your favorite invention?
- What did you learn from this inventor/invention?
- What is the problem this invention solves?
- How does this invention work?
- Did the inventor make any changes to the invention? Why did the inventor make those changes?
- Who do you think will use this invention?
- Does the invention help the world or just a few people?
- What impact on the environment do you think the invention will have?



IF.G Summer Challenge - Inventor Talk

Presentation Slide Set Guidelines

Rules

- The presentation slides should present the value of your favorite invention and how it was created.
- The presentation slides should be within 6 pages.
- The language of presentation slides must be ENGLISH.
- Your presentation slides MUST have:
 - The name of your favorite invention
 - Student(s) Name(s)
 - Student(s) Grade(s)
 - Country

Helpful Hints

You might also want to add some of the following:

- Images showing how the invention was made.
- How is the invention used?
- The biography of the inventor.
- Text which supports and explains any pictures, drawing, charts, etc.
- What scientific principles were used in the invention?
- What engineering disciplines were used in the invention?
- Testimonials from users, research results.
- The value and impact of this invention that may change people's lives.
- Why the invention is unique and better than other similar products in the same period?
- Any other information about the invention that will help explain it, what it does, or why it is good.



IF.G Summer Challenge

Invention Convention Guide



You need to have an invention or prototype to participate this event. In IFG Online judging circle, you will present your invention and the whole inventing process.

Date 15 AUG 2020

Eligibility

Expect eligibility listed in General Rules of this Student Guide, all projects must have:

- **A prototype** (which may be non-working). Your invention should be either new and original or an innovation based on something that already exists.
- **A presentation slide set.** You must design a presentation slide set about your invention. The slide set will highlight key points of the invention process.

Optionally, you may also present:

- **An inventor's log** (logbook or journal), recording the journey of your invention process.

Information to be uploaded before the event

To participate Invention Convention event, you should submit following information on <https://inventfuture.global/summer-challenge/invention-convention/> before 08 Aug 2020:

- Your Unique Identify Code (UIC).
- Participant's information, includes time zone, name, gender, grade, country, city, parent name, and Email.
- Project information, includes the name of your invention, description, the problem it solves, how your invention works, the presentation slides ppt(x) or pdf file, and/or inventor's log pdf file.

You will find following sessions in Inventor Talk Guide

- Rubric
- Online Pitch Guidelines
- Presentation Slide Set Guidelines
- Inventor's Log



IF.G Summer Challenge - Invention Convention

Rubric

Invention Process	Description
Identifying and Understanding	<p>The identifying stage is where inventors seek or find a problem that they want to solve. It is important to ask inventors how they uncovered this problem and who else might experience the same problem and to what end.</p> <p>Understanding a problem refers to the research that an inventor has done to understand what else exists to solve the problem as well as the full impact the problem may have on others.</p>
Ideating	<p>Ideating refers to the brainstorming or imagination stage that a student goes through to generate original ideas and begin to develop idea/s into specific requirements to determine the likelihood of success.</p>
Designing & Building	<p>Designing an invention or a prototype requires critical-thinking skills; students should be able to articulate how they wanted the invention to work and why they chose the materials they did for executing their invention.</p>
Testing & Refining	<p>The key to this step is iterations, improvements and perseverance. The best inventors know that the first build is often not the best and seek feedback through testing and refine their design accordingly.</p>
Invention Impact	Description
Market and Value	<p>How large and/or viable is the potential market? To what extent did inventors research the market?</p> <p>Do inventors clearly summarize why a consumer or user should buy or use their invention? This statement convinces a potential (or future) consumer that one particular product or service will add more value or better solve a problem than other similar offerings.</p>



Invention Impact

Description

Do inventors consider the potential environmental, societal, and other impacts of the invention? How does the invention improve environmental & social conditions or have a minimal adverse impact?

Originality

Is the invention unique, novel, and creative? Is it distinguishable from prior inventions and those of his/her peers? To what extent inventors contribute to the originality of their invention? Do inventors clearly state the advance and value of the invention based on their research on similar existing inventions?

Communication

Description

Prototype or Model

Does the prototype clearly communicate the key characteristics that make the invention valuable, usable and unique?

Note: Outside assistance and collaboration is acceptable as long as the student is driving the process and documents outside help. Students should only do what they can do safely. Credit should be given where assistance was received.

Presentation Slide Set

- Does the presentation slide set have strong visual appeal?
- Is the slide set eye-catching with color, pictures, graphs and variety?
- Is grammar, spelling and punctuation correct?

Does the slide communicate significant aspects of the invention process from identifying to ideating?

Live Pitch and Q&A

The live pitch and Q&A takes place during the IF.G Summer Challenge event. The best pitches include the following:

- Introduction: solution name, inventor's name, country, grade, etc.
- An overview of all invention process elements outlined in the criteria (above).



Communication**Description**

- Use and reference communication elements (including presentation slide, prototype, and/or logbook).
- Explanation of origination of the idea (helping to assess the originality).
- Other recommendations include:
 - Courteous and professional to peers in judging circle.
 - Concise, appropriate pace, clearly heard and understood.
 - Professional posture.
 - Enthusiasm, passion, inflection, appropriate body language.
- No reading from cue cards; explanation in own words.
- No longer than 3 minutes.



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Online Pitch Guidelines

Rules

- All pitches must include Introduction: invention name, inventor's name, grade, and country.
- Pitches should no longer than 3 minutes.
- The pitch should talk about all invention process elements outlined in the criteria.
- The pitch must address the originality to your invention and the research you have done to discover what makes your invention an original or an improvement on a product that already exists.
- Student/team will use and reference presentation slide set and prototype.

Helpful Hints

- Begin with introductions. Each student should introduce his/her name, grade, country, and name of their invention.
- Your pitch must address the originality of your invention.
- Be sure to present all steps of the inventing process that you went through while creating your invention. What challenges did you encounter? What changes did you make and why? Read the rubric carefully to make sure you address all criteria.

You may also want to talk about:

- How did you come up with the idea for this invention?
- What people, situations, or conditions does this problem affect?
- How did you think up your solution to the problem?
- Where did you get the materials for the invention?
- Who helped you build the invention and what did they help you do?
- Are there other better materials you could have used that would improve the invention?
- Who has used your invention and what did they think about it?
- What changes might you want to make to your invention?

Frequently asked questions during Q&A

- What problem are you trying to solve with this invention?
- How does your invention work?
- Did you make any changes to your invention? Why did you make those changes?
- Who do you think will use this invention?
- Does your invention help the world or just a few people?
- What impact on the environment do you think your invention will have?



IF.G Summer Challenge - Invention Convention

Presentation Slide Set Guidelines

Rules

- Your presentation slides should contain the key steps of your inventing process
- The presentation slides should be within 6 pages.
- The language of presentation slides must be ENGLISH.
- Your presentation slides MUST have:
 - The name of your invention
 - Student(s) Name(s)
 - Student(s) Grade(s)
 - Country

Helpful Hits

You might also want to add some of the following:

- Images showing your building or testing.
- How the invention was made.
- How the invention will be used.
- Text which supports and explains any pictures, drawing, charts, etc.
- What scientific principles were used in your invention?
- What engineering disciplines were used in your invention?
- Testimonials from users, research results.
- Any other information about the invention that will help explain it, what it does, or why it is good.



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Inventor's Log

Maintaining a logbook is an important part of the inventing process. The logbook is a written record of the process of creating the invention. This should be written as the inventing is going on and not compiled after the process is complete. The logbook does NOT have to be in any particular style or format. And it does NOT have to be perfectly written, drawn and spelled. Sloppiness and errors should be avoided, but they are not fatal flaws.

Rules

The logbook can contain more information and sections, but as a minimum it should address each of the Stages of Invention.

- Identifying the Problem
- Understanding the Goal
- Identifying a Solution
- Designing a Solution
- Building a Device
- Testing & Evaluating the Device
- Communicating the Results



We are Inventing Future

We are organizations from different corners on earth.

We collaborate together and make InventFuture.Global happen, which is a truly global education experience for every students!

Come on, INVENT the FUTURE with us!

