



## **2015 Season Coach and Mentor Lesson Guide**

Welcome to Technovation! Please read these page outlines independently before presenting each week's PowerPoint slides to your students. The material here is meant as an introduction for you to confidently present our curriculum to its full capacity.

**DIRECTIONS:** The judging rubric for Technovation 2015 contains objective and subjective scoring. The objective score composes of the Ideation, Technical, and Entrepreneurial scores. It is possible for all teams in your scoring batch to receive a perfect score on these objective scoring. The Overall Impression score is where you should score the apps in your batch relative to each other for a subjective score. Maximum points on the subjective part should only be awarded if the submission has truly exhausted their research and development for a complete prototype.

<b>Ideation Score</b>		<b>0</b>	<b>1</b>	<b>3</b>	<b>5</b>	<b>SCORE</b>	<b>COMMENTS</b>	
<b>Objective Score</b>	<b>Did the team identify a real problem in their community?</b>	No	The problem identified is more of a nuisance, and does not have larger social implications.	The problem seems to be real, but could use a little more detail.	Yes			
	<b>Does the app address the problem that they identified?</b>	No	The app addresses a tangential problem.	The app addresses some parts of the problem.	Yes			
						10 maximum possible points		
	<b>Technical Score</b>		<b>0</b>	<b>1</b>	<b>3</b>	<b>5</b>	<b>SCORE</b>	<b>COMMENTS</b>
	<b>Is the prototype they submitted fully functional? (All buttons and links functional and no obvious bugs.)</b>	No	Only superficial functionality. (i.e. screen transitions)	Mostly, except for a few minor issues. I can still get the general idea.	Yes, no bugs that I could see.			
	<b>Does the prototype go beyond static information? (e.g. calls another app on the phone, saves information to an external server to coordinate multiple users, etc)</b>	No, only information stored directly in the app is used.	The app uses other resources, but it seems unnecessary for the purpose of the app.	Mostly, but there are one or two other places where the app could have used an external service to be more effective.	Yes, the app uses multiple resources and does so effectively.			
	<b>Does the prototype match the feature list defined in their product description?</b>	No	Less than half of the features listed are in the prototype and minimal explanation for why features are missing.	More than half of the features are in the prototype, and there's a reasonable explanation for the missing features.	Yes, everything stated is included.			
	<b>User Interface. Is the UI intuitive and easy to use?</b>	No	All the functionality is there, but I had to watch the demo video to and read the product description to understand the app.	The app was obvious after thoroughly reading the product description.	A quick skim of the defined problem and product description was enough to understand how to use the app.			
					20 maximum possible points			
<b>Entrepreneurial score (Business Plan and Pitch Video - broken down into its components)</b>		<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>SCORE</b>	<b>COMMENTS</b>	
<b>Product Description</b>	None	A short and vague description.	Describes the app, but value of the app is vague.	Describes app and value added.				
<b>Potential Market Size</b>	None	Groups of people mentioned, but no estimates done.	Estimates done and some groups defined. Could have been more thorough.	Estimates done and groups defined. Estimates clearly explained.				
<b>Competitive Analysis</b>	None	Competitors are named, but explanations are sparse or nonexistent.	Competitors are named, and explanations are provided. Could have been more thorough.	Analysis is exhaustive.				
<b>Potential Revenue</b>	None	Calculations are suspect, and explanations are unclear.	Calculations exist, but basis of the calculations could use more explanation.	Calculations and explanations are thorough and believable.				
<b>Branding and Promotion</b>	None	A logo or promotional sources are included, but explanations are sparse or nonexistent.	Logo and limited promotional sources are included. Explanations for promotional plan could be more thorough.	Logo and promotional plans are included, well explained and exhaustive.				
					15 maximum possible points			
<b>Subjective Score</b>		<b>0</b>	<b>2</b>	<b>5</b>	<b>10</b>	<b>COMMENTS</b>		
<b>Overall Impression - Award points based on which ones gave the best pitch in your batch.</b>								
<b>Overall Pitch Quality. Is the Pitch compelling? Can you see this app being used by consumers?</b>	Not at all. Argument was flawed and difficult to follow.	I understand their argument, but I'm not sold.	Compelling arguments were made, and a small following may form.	Yes! The argument was compelling enough to think this app has true growth potential.				
					10 Maximum total points			
<b>Total Score</b>	<b>Deliverables (subtract 1 point for each item missing)</b>	Pitch Video	Demo Video	Prototype Source code	Screenshots	100-word app description	Business plan	
	<b>Bonus points: Has the app already been launched the the Play Store or App Store? (2 possible bonus points)</b>							
	<b>TOTAL SCORE</b>					<b>55 maximum total points</b>		

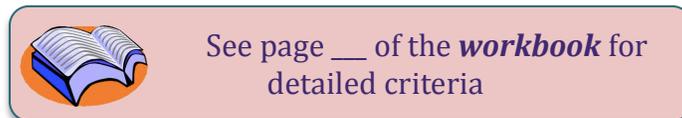
## Introduction to the Technovation Curriculum:

Thank you for joining Technovation and making a meaningful impact on the next generation of female leaders in technology! You are an instrumental part of our program. This introduction will familiarize you with the twelve-week Technovation curriculum so you may confidently lead your team. Remember, it's okay if there are times when you don't have a direct answer when a student asks a question. What's most important is that the students develop problem solving skills, so work through problems with the students so they learn how to find answers even when you're not there.

Each lesson has set modules with concepts and activities that should be covered. All the activities and concepts are designed to help the students work their way towards submitting their deliverables for Technovation, but more importantly, towards becoming the next generation of female entrepreneurs.

We recognize that every learning environment is unique, so feel free to modify the lessons and modules as needed. Your students will also have access to a workbook with activities and more information that correspond to the lessons.

Activities will be marked in the lesson presentation with this image:



Activities have a suggested time listed on the PowerPoint slide. These are meant to actively engage students in the lecture materials. The suggested time length is meant as a tool to keep students engaged on the task at hand.

In addition to activities, each lesson has a "Think-Pair-Share." These will be marked in the PowerPoint presentation by this image:



Each "Think-Pair-Share" takes place after you have introduced a concept, and it allows students the opportunity to think (or write), silently, for 30 seconds or so, pair with a partner to discuss, and then share out with the class (choose 1 or 2 pairs to share what they discussed). These Think-Pair-Shares are important since they make the lesson more interactive, as each student is engaged in thinking about the material and discussing it with a partner. It also allows students to formulate an answer in their mind before feeling the pressure of speaking it out loud, which is helpful for shy students who might be reluctant to raise their hand. Each "Think-Pair-Share" should take no more than 2-3 minutes. It's meant to be a quick activity to gauge everyone's understanding of the material and allow for interactive discussion.

## **A Tour Through the Lesson Summaries**

One of the first slides in the PowerPoints is titled “Modules” with an outline of the topics and activities for the lesson. Included in these summaries are the objectives for the lesson. Following the “Objectives” section is the “Content” section. We advise you to read, or skim, this before each week’s lesson. It will have some information on the coming lesson and the major points that should be conveyed in presenting the materials to students.

Overall, the summary is meant to be another form of support to you. Combined with the lesson slides, we hope you feel prepared to lead your team of girls and instill confidence in them as the next generation of technologists and entrepreneurs. You are making an enormous difference in their lives!

## Overview of Lessons

Lesson	Date	Topics	✓
1		Introduction to Technovation Career Exploration – Get to know your mentor! Talk to Me tutorial	
2		Ideation – Brainstorming community issues Lean Startup Design a survey – get feedback on the issues Collection of Games tutorial	
3		Ideation – Brainstorming solutions Design a survey – get feedback on solutions <b>Potential Market Size</b> Get feedback on Market Size from Teachers/Mentors Maps Tutorial	
4		Revise Market Size calculations based on feedback User Interface and Product Design - Paper Prototyping <b>Product Description</b> Get feedback on paper prototype from peers/potential users Get feedback on product description from Teachers/Mentors	
5		Revise Product Description based on feedback Revise paper prototypes based on feedback and transfer to AI Plan what you want to accomplish each week <b>Competitive Analysis</b> Get feedback on Competitive Analysis from Teachers/Mentors	
6		Revise Competitive Analysis and Pricing based on feedback <b>Branding and Promotion</b> Get feedback on Marketing plan from Teachers/Mentors Continue working on prototype	
7		<b>Potential Revenue</b> Revise branding and promotion plan based on feedback Continue working on prototype	
8		Revise potential revenue based on feedback <b>Pitch Guidelines</b> – Plan pitch video, write out script Get feedback on pitch video plan Continue working on prototype	
9		<b>Demo video guidelines</b> – plan demo video Begin filming pitch video Continue working on prototype Get feedback from peers/potential users for your app so far	

10		Begin filming demo video Continue working on prototype Continue working on pitch video	
11		Edit Videos Put together business plan Review deliverables Continue working on prototype	
12		Make any last edits and revisions Reflection Submission Post-Surveys	

## **2015 Final Deliverables**

- 100-word app description
- App Prototype source code
- 3-5 Screenshots of your app prototype
- Pitch Video on YouTube under 4 minutes (+/- a few seconds)
- Demo Video on YouTube under 2 minutes (+/- a few seconds)
- Business plan – typed and in PDF format

# Technovation Intro and Career Exploration

## **Modules:**

- Introduction to Technovation
- Career Exploration – Get to know your mentor!
- Talk to Me tutorial

## **Objectives:**

- A clear understanding of the Technovation Challenge and tasks for the next 3 months.
- Students will hear about your career, understand your day-to-day, be inspired by your love for your job, and see real-life examples of your work

## **Content:**

Technovation is a program of Iridescent (a 501(c)3 nonprofit) in which young women are exposed to computer science and entrepreneurship through designing and programming a mobile app. We aim to inspire young women to enter the field of technology by connecting them with role models and an experience of creating their very own high-tech product.

The students are prompted to brainstorm a community problem and develop a mobile app to address that problem. Our curriculum supports App Inventor, which develops apps for the Android platform, but students can feel free to use other platforms to develop their app. If students wish to use App Inventor, they can log in using a gmail account at [ai2.appinventor.mit.edu](http://ai2.appinventor.mit.edu).

In addition to designing and programming their app, Technovation teams learn business strategies. The team puts together a 4-minute pitch video to describe their idea and compete for funding. The complete list of deliverables is on page 5 of this guide. The judges will evaluate the teams based on quality of their app, communication, demonstration of critical thinking, implementation, and strategy.

For the mentor, this is an opportunity for the mentor to inspire and get to know the students. Please bring several real life artifacts, photos, simulations, and/or videos of what you do at your job to give them a “day in the life” picture of what you do. Let your enthusiasm and passion for your career shine through. Encourage the students to write down questions as you are talking and then ask as many as you have time to answer. They can always follow up with you afterwards, continuing to build upon the mentor relationship.

### **Modules:**

- Ideation – Brainstorming community issues
- Lean Startup
- Design a survey – get feedback on the issues brainstormed
- Collection of Games tutorial

### **Objectives:**

- Students will begin the ideation process and work their way into effective brainstorming.
- Students will be introduced to the Lean Thinking framework and understand the benefit of conducting ample market research before developing a product
- Design a survey to help get feedback on ideas

### **Content:**

This lesson provides students with a framework to consider when defining a problem space. The critical point of this lesson is that even if they think a problem applies to a group of people, they don't actually know until they ask that group.

Lean Thinking is a term coined by Eric Ries of Lean Startup where entrepreneurs are encouraged to get feedback from their customers before developing a polished finished product. If their target customers do not like the fundamental idea of their app, then the team should pivot. Pivoting means that the product (1) needs to broaden in its scope, (2) a component of the product needs to become to entire product, or (3) the app can be applied to a different target customer. Pivoting early on (based on consumer feedback) will save considerable time and resources, so teams are encouraged to find out if they need to do this early by conducting market research with their target customers.

The students can conduct market research by simply talking to target customers and giving out surveys to customers. The results from the surveys can be analyzed to see if the team needs to pivot their idea.

## **Solution Brainstorming**

### ***Modules:***

- Ideation – Brainstorming solutions
- Design a survey – get feedback on solutions
- Potential Market Size
- Get feedback on Market Size from Teachers/Mentors
- Maps Tutorial

### ***Objectives:***

- Understand what a market is, defined a target market for their app, and
- Identify who the target customers are and design a survey to find out if the app is a solution people would use

### ***Content:***

This lesson supplies students with a framework to consider when creating their app idea. The critical point of this lesson is that even if their product is amazing, it may fail as a business if there aren't any customers who want it. Asking your target customers as soon as possible for feedback on your product idea allows you to "fail fast" and pivot or change course before losing precious time and resources.

Customer development is another perspective for students to consider when designing their app. For example, Cindy Alvarez helps companies build better products through intensely understanding their customers. Customer development is seeking to understand what the customers need, how they work, where their pain points and highest priorities are. Students should find out more about their customer needs by surveying them-- either through Twitter, Facebook, email, or in person.

Based on initial thoughts and the survey results, the students should be able to determine their target markets and do some calculations to figure out approximately how large those markets are. In other words, how many potential users are out there for the app the students want to create?

## User-Centered Design

### **Modules:**

- Revise Market Size calculations based on feedback
- Product Description
- User Interface and Product Design - Paper Prototyping

### **Objectives:**

- Students revise their potential market size calculations based on Coach, Mentor, and survey feedback.
- A first draft of the Product Description should be complete by the end of the session.
- Understand usability testing and investigate how apps on the market are designed to be user-friendly
- Students should create their own paper prototypes.

### **Content:**

User-centered design means that the design of your app serves the user, not the designer. To reiterate this point with students, use the example of crash dummies. Originally, crash dummies were developed only in the form of adult men (since they were designed by adult men engineers). As a result of not designing with the user in mind, women and children were injured at higher rates. Products are frequently designed without the user in mind.

An interface is the common boundary or link between two things. User interface is the link between the person and thing. The computer screen of a computer is the interface between the user and the computer. User Interface Design is designing things while taking into account the people who use them and understanding how that user will experience the product. There is also a second video to show students about usability testing: <http://www.youtube.com/watch?v=GrV2SZuRPv0&feature=related>

## Competitive Analysis

### **Modules:**

- Revise Product Description based on feedback
- Revise paper prototypes based on feedback and transfer to App Inventor
- Product Planning
- Competitive Analysis

### **Objectives:**

- Transfer revised paper prototypes to App Inventor
- After this lesson, students will better understand the importance of giving and incorporating others' feedback into their paper prototype and product description.
- Realistic time allocation towards completing their app in time for submission.
- Students will do a thorough analysis of potential competition and show how their app will be better.

### **Content:**

Constant feedback and revision is essential to any successful product. This lesson continues the Lean Startup methodology with revisions to the paper prototypes based on target user feedback. All feedback given and received should be concrete and constructive. Actionable items should always emerge from the feedback list.

A realistic project timeline is an important part of creating a relevant product that consumers will want to use. Conceptualizing a product that is useful today, but not releasing it for years may be fruitless. A slow release time gives competitors an advantage and an idea can be obsolete before it is even fully built. The students will need to prioritize their features and determine when they realistically expect to complete each of them. If they can't seem to complete all the features in time for submission, they'll need to reassess the features and see what's possible.

In the last session, a brief analysis was already done on the user interfaces of competing apps. A more thorough analysis needs to be done to see if a new idea has the potential to be truly competitive. The analysis should include a comparison of features, target audiences, promotion plans, pricing, and any other aspects that may impact success.

## **Branding and Promotion**

### ***Modules:***

- Revise Competitive Analysis based on feedback
- Branding and Promotion
- 100-word app description
- Continue working on prototype

### ***Objectives:***

- Continue the cycle of feedback to revise the competitive analysis
- Consider the impact personal and product branding can have on the product's success and build a plan for branding and product promotion.
- Effectively describe the app in 100 words or less.

### ***Content:***

A person's branding is just as important as her product's. Investors will want to know that the person pitching the product can also build and deliver it. There are a lot of methods by which an investor try to get more information about a person (Twitter, Facebook, LinkedIn, etc), so the student should try to Google herself and see what comes up. She should not feel embarrassed or uncertain about any information she leaves public. If she does, then perhaps it's time to change some privacy settings!

The first way that a company can brand itself is through its name and logo. Names can be straightforward and descriptive or they can be fanciful. Logos should contain the company (app) name and be easy to read. Students should consider using color to alter the perception of their apps since different colors elicit different types of emotions. Check out these resources for some tips: [Colormatters.com](http://Colormatters.com), [tigercolor.com](http://tigercolor.com), [color-wheel-pro.com](http://color-wheel-pro.com).

Promotion is also a big part of branding. How do the students plan to get users? How will people hear about their product? A lot of companies pay for ads on different sites (Google, Facebook, etc). What are some other ways that the students can promote their app? They can take a look at their competitors and see if there's anything they're using that might be helpful or any methods they may be missing.

The 100-word App Description is one of the final products teams will need to submit at the end of the challenge. It gives their audience a quick summary of their product, and it's what customers will see when they view their app on the market. Encourage the students to make their app description fun and creative.

## Potential Revenue

### ***Modules:***

- Potential Revenue
- Revise branding and promotion plan based on feedback
- Continue working on prototype

### ***Objectives:***

- Students should have calculations to reflect how much money they expect to make from the app.

### ***Content:***

This lesson covers some of the basics of potential revenue in the business world. There are many different ways that apps make money. Some give away a basic version for free but charge for a premium version with more features. Others charge a subscription fee much like that for a magazine. There are even many game apps that charge for in-app purchases (e.g. buying game currency to purchase gaming items). The students need to decide how they will make money from their app. They can choose one of these schemes, a combination of them, or a wholly new method.

### ***Modules:***

- Revise potential revenue based on feedback
- Pitch Guidelines – Plan pitch video, write out script
- Get feedback on pitch video plan
- Continue working on prototype

### ***Objectives:***

- The students should have a plan for the pitch video by the end of the session.
- The students should reassess their list of features and see if the priority is still correct and they're on track to complete everything.

### ***Content:***

Technovation aims to create an environment in which female students feel empowered and confident. Promotion of self is a skill that many women have difficulty with, and this can have a negative impact on their careers. This lesson aims to equip students with presentation tips to boost their skills in self-promotion and confidence. At this point in the Technovation Challenge, young women should feel comfortable with their peers and have a safe space to practice without anxiety.

This lesson can be enhanced with a more personal touch. Please feel free to add any suggestions or stories of your own to counteract any presentation anxiety in the students. This might also encourage students to speak about their own experiences presenting in the past, and/or share their concerns about pitching.

The students will need to confidently sell their company to investors to show they have thought through their product and applied it realistically. The pitch video is their visual opportunity to present the project on which they've spent the last 12 weeks working and promote their hard work. The video can be in whatever format the students want. Videos have been made in a variety of ways in the past: testimonial, skit, presentation, etc. A simple search of "Technovation pitch video" on Youtube should yield some past submissions. The only requirements that Technovation requires for the submission are as follows.

- The pitch is 4 minutes long (+/- a few seconds)
- All members of the team need to appear in the video.
- Make it compelling!

## Demo Guidelines

### **Modules:**

- Demo video guidelines – plan demo video
- Begin filming pitch video
- Continue working on prototype
- Get feedback from peers/potential users for your app so far

### **Objectives:**

- The students will understand the purpose of the demo video, what is required of it, and plan it.
- The students will prepare to get user feedback on their prototypes so far.

### **Content:**

Another important part of launching a new product is a Demo Video. Potential customers like to see either try a new product or at least see how it works before buying it. The Demo Video should clearly demonstrate the important features in the students' app. Just like for the pitch video, a quick search for "Technovation demo video" on Youtube will yield some examples from previous years. The requirements for the Demo Video are as follows:

- 2 minutes long (+/- a few seconds)
- Show the functionality of your app
- Simple and clear
- Highlight the unique features of your app
- Focus on the user interface
- Narrate during the video if you need to do so

At the end of the session, students should take their prototypes and get feedback from potential users. They

## User Feedback

### ***Modules:***

- Begin filming demo video
- Continue working on prototype
- Continue working on pitch video

### ***Objectives:***

- Students will incorporate user feedback into their prototypes, continue work on the pitch video, and begin work on the demo video.

### ***Content:***

Incorporating feedback is necessary for a student designing their app, and an essential part of the Lean Startup methodology. The students should have some actionable items from the user feedback once again and make modifications as necessary for the remaining weeks before submission.

This lesson is great for students' professional development. Beyond the Technovation Challenge, a goal of this lesson is to be able to incorporate feedback and criticism, which will help them in their school life, college career, and professional career. By being able to handle constructive criticism and remove an emotional reaction to other's feedback, students will be able to grow.

## **Video Editing**

### ***Modules:***

- Edit Videos
- Put together business plan
- Review deliverables
- Continue working on prototype

### ***Objectives:***

- Students will put together all the pieces for the business plan.
- Students will review the deliverables required for submission
- Students will edit videos and continue working on prototypes.

### ***Content:***

At this point, the students should have completed most of their deliverables for the program. Today's lesson reviews the deliverables required for submission.

- Source code for the team's prototype
- 4 minute video pitch
- 4 minute app demo video
- 100-word App Description (PDF format)
- Business plan

The business plan has already been written in stages over the past 2 months. They just need to be pieced together into one document. It should contain the following sections.

- Product Description
- Potential Market Size
- Competitive Analysis
- Branding and Promotion
- Potential Revenue

## **Submission**

### ***Modules:***

- Make any last edits and revisions
- Reflection
- Submission
- Post-Surveys

### ***Objectives:***

- Make edits and fix anything else needed before submission!

### ***Content:***

All of the deliverables should be complete at this point. The students should make any last edits they need and then submit. Students should also take some time to complete the post-survey after submission. These results are important in helping Technovation to learn more about how the program can be improved for all future participants. In addition, everyone should take some time to celebrate this accomplishment! Submitting to Technovation is not an easy feat, and should be celebrated. Reflect on the experience with the students and talk about what could have gone differently.