



КІЇВСТАР



Innovation & Entrepreneurial Culture ●●

GO
camp.



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ЯК ВІДКРИТИ ВЛАСНИЙ БІЗНЕС

Та де взяти стартовий капітал? Для деяких країн шкільне підприємництво є звичною справою. А поки Україна тільки на шляху до цього, ми, спільно з найбільшою українською телекомунікаційною компанією «Київстар», розробили програму таборів «GoCamp», яка навчить дітей не просто теорії, а дасть достатню базу практичних знань для майбутнього.

Хто, як не великий і потужний український бізнес зі своїми власними історіями та реальними кейсами, може розкрити всі секрети підприємницької діяльності в Україні та показати правильний шлях до успіху?

Ми навчимо дітей створювати ідеї для вирішення будь-яких проблем та не боятися помилок, навчатися протягом усього життя, працювати в команді, взаємодіяти з іншими та намагатися реалізовувати власні проекти, покращуючи їх з кожним днем.



Наталія Кострова

Керівник відділу
корпоративної
та соціальної
відповідальності
ПрАТ «Київстар»

ВИСТУПАЮЧИ КЛЮЧОВИМ

партнером проекту «GoCamp», компанія «Київстар» реалізує основні принципи соціальної та корпоративної відповідальності, які полягають у розвитку культури підприємництва, створення інноваційних проектів та підвищення рівня цифрової грамотності.

Ми віримо, що починати треба з перших ступенів освітнього шляху та вже зараз робити свій внесок у створення кращого майбутнього для України. Адже єдина можливість передбачувати майбутнє – це будувати його.

Компанія «Київстар» бажає продуктивної участі в «GoCamp» та наполегливості в створенні позитивних змін. Натхнення Вам!



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Слоган табору:

The best way to predict the future is to create it ●●

День	Час			
	9:00–9:40	9:40–10:20	10:20–11:00	11:00–11:40
День 1				
Варіант 1	Відкриття табору (якщо розпочинаємо до приїзду волонтера). Розповідь про тему табору. Icebreaker games		Тематична гра	Створюємо та домовляємося про правила табору
Варіант 2	Відкриття табору з волонтером	Знайомство з волонтером – 30 хв (ігри на знайомство). Country presentation (Volunteer's country and Ukraine)		Поділ учасників на таборіві команди. Команди планують представлення (малюють емблему-логотип, своє мото-кричалку + що вони очікують від табору)
День 2	Topic #1 IDEA GENERATION		Team Building Game. Part 1	Project time based on IDEA GENERATION
День 3	Topic #2 INTRO TO ENTREPRENEURSHIP		Sport, Tech & Creative activities	Project time based on INTRO TO ENTREPRENEURSHIP & SKYPE з ментором Київстар
День 4	Topic #3 CREATIVE THINKING		Квест 4G	Project time based on CREATIVE THINKING
День 5	Topic #4 MARKET RESEARCH		Team Building Games. Part 2	Project time based on MARKET RESEARCH
День 6	Topic #5 OPPORTUNITY ANALYSIS		Sport, Tech & Creative activities	Project time based on OPPORTUNITY ANALYSIS & SKYPE з ментором Київстар

- Вік – 12–15 років.
- Тривалість – 10 основних днів + 3 варіативні.

Час

11:40–12:20

12:20–12:30

12:30–13:00

Підготовка креативного представлення школи від учасників табору для волонтера

Brunch

Підготовка креативного представлення школи від учасників табору для волонтера

* варіативна складова

Icebreaker Activities

Brunch

Представлення команд (логотип, кричалка), очікування команди від табору – 20 хв

Brunch

Співи (англійською мовою)

Brunch

Презентація напрацювань від проектних команд за системою SCRUM-дошки. Команди по черзі зачитують завдання, які вони планують виконувати протягом табору

Brunch

Рефлексія | Екватор табору

Brunch

Підготовка до творчого представлення команди табору

Brunch

Представлення напрацювань за системою SCRUM-дошки (To Do | In Progress | Done)

День	Час			
	9:00–9:40	9:40–10:20	10:20–11:00	11:00–11:40
День 7	Перегляд та обговорення TEDeX відео	Підготовка до творчого представлення команди – 30 хв		Topic #6 DESIGN THINKING AND PROTOTYPING
День 8	Project time based on DESIGN THINKING AND PROTOTYPING		Співи (англійською мовою)	Спортивні естафети між командами
День 9	Topic #7 PUBLIC SPEAKING		Велика рухлива гра	Project time based on PUBLIC SPEAKING
День 10				
Варіант 1	Вікторина. Змагаються усі команди між собою, ведучий – вчитель.		ПРЕЗЕНТАЦІЯ ПРОЕКТІВ НА ЗАКРИТТІ ТАБОРУ & SKYPE з ментором Київстар	
Варіант 2	Пікнік – 2 години *. Тематична гра – 30 хв *. Рефлексія – 45 хв (учні діляться враженнями від табору, теми, вивчення англійської та роботи з волонтером) *. Brunch + співи – 30 хв (усі вивчені в таборі пісні англійською мовою)			
	Тематична екскурсія. Lunch з собою – пікнік. Під час екскурсії запланувати + одну гру (варіативна складова, можемо вставити її у будь-який день)			
Ідеї	<ul style="list-style-type: none"> Кожного дня табору діє пошта, учні можуть писати листи; пошта роздається під час обговорення підсумків дня. 			

Час		
11:40–12:20	12:20–12:30	12:30–13:00
	Brunch	Співи (англійською мовою)
	Brunch	Представлення напрацювань за системою SCRUM-дошки (To Do In Progress Done)
	Brunch	Презентація відео від кожної команди «GoCamp 2018. Як це було»
Гра + brunch	Закриття табору, коло подяки + спільне фото	
	Закриття табору + спільне фото	* варіативна складова

- На початку табору команди обирають між собою «оператора», який знімає цю команду (як вони працюють над проектами, грають в ігри, тощо). В останній день табору команда презентує відео-ролик.

Day 1

Введення

На початку першого заняття з підприємництва вчитель пояснює учням, що протягом табору вони будуть вивчати підприємство та інновації. Команда компанії Київстар підготувала для них реальні завдання та ситуації, з якими учні будуть працювати на заняттях.

Також потрібно наголосити, що протягом табору учні матимуть 7 занять для реалізації власних проектів та одне заняття, щоб презентувати ці проекти. Детальніше про це вчитель розповість під час заняття.

Перше заняття з проектів

На першому занятті з проектів вчитель розповідає учням, що протягом табору на них чекає 7 практичних занять, під час яких команди створюватимуть власні прототипи додатків.

Для цього учням потрібно розібратися у двох важливих темах:

- Internet of things (IoT);
- Application development (AD).

Вчитель показує 2 презентації про IoT та AD на 10 хв та відео від команди Київстар про типи додатків та реальні приклади вже створених додатків Київстар.

Після цього вчитель оголошує учням, що вони діляться на команди. Далі за допомогою технік Idea generation (які вони пройшли на першому теоретичному занятті) учні розпочинають брейнштормити над ідеєю свого додатка.

Основне завдання ●●

У перший день табору важливо донести до учнів, що протягом 7 занять необхідно виконати 3 ключові завдання:

- придумати додаток для Київстар і залучити використання зв'язку;
- зняти відео-презентацію та презентувати свій проект;
- завантажити відео-презентацію на Facebook-сторінку табору.

Презентувати свої проекти учні будуть в кінці табору в форматі відео та спікера від кожної команди, який зможе розповісти про ідею.

Ці відео учні зможуть опублікувати на сторінці Facebook-групи для усіх шкіл, які беруть участь у програмі. Відео-презентації проектів, які наберуть найбільше голосів від учасників Facebook-групи, отримають приз для своєї школи.

Також вчитель роздає / надсилає учням матеріали (презентацію та методичку) з інформацією про IoT та AD, щоб учні могли самостійно вивчати цю тему протягом 7 занять та шукали нову інформацію, яка допоможе реалізувати їхній проект та створити прототип додатка на обрану тему.



Day 2

Topic #1 IDEA GENERATION

Total Duration – 1 hour 20 min. Lesson preparation (task for teacher and volunteer):

- Read the schedule of the lesson;
- Print out the materials;
- Read the material about the brainstorming technique («Brainstorming Strategies»).

DESCRIPTION

Divide students into teams (under 5 people), for small groups: pairs or groups of 3.

ACTIVITY 1

Storytelling – 10 min

BACKGROUND – TEACHER CAN TELL STUDENTS ABOUT IT

Idea generation is the process of forming, revising, pondering, and sharing new ideas of any kind realistic, abstract, or anywhere in between. Brainstorming (in all its forms) is probably the best known aspect of idea generation. It's important because it helps people say their ideas out loud, however silly they may seem.

Once the idea is out in the open, it is recorded and then it can be developed and tested. It is important for students to understand that if ideas are never shared, they will never go any further than just that – an idea! Once an idea is shared, it becomes a

possibility. Sharing ideas in a group has the added advantage that it can evolve and morph into other ideas and it can spark additional new ideas. Entrepreneurs rarely keep ideas to themselves – they talk about them and share them and see where they can go with them.

Most students will be familiar with the general concept of brainstorming – where either an individual or a group of people come up with as many new ideas as possible for a specific topic or problem. Brainstorming can be very effective for students, who should see links to where they could use the different techniques in their own lives.

More information in Appendix 1

ACTIVITY 2 ●●

Silly Stories Warm-up – 15 min

Print out cards for each team (cut up) folder PRINT Story Starter Cards (Appendix 2)

- 1 Tell students that in this lesson they will be finding ways to come up with new ideas. This warm-up activity will help them dive straight in and get their creativity flowing! (You will explain more details about idea generation methods after the warm up).
- 2 Put students into groups of 6.
- 3 Hand out the story starter cards 1 per group. Place them face down in the middle of each group. Explain what they are going to practice teamwork and brainstorming by building on each other's ideas and creating a story from the starting card.
- 4 The first person picks up the card and reads it aloud.
- 5 The next person will add to the story starter by stating a sentence to help develop the story (this can be in any way whatsoever adding in action, new characters, situations – whatever comes to mind)!

- 6 For example, if the story starter read: «I was in school on a cold winter's day dreaming about the weekend when I looked out of the window and saw aliens land on the soccer field,» the next person might say, «There were 200 of them running towards me.» The next person might say, «They had three heads and two eyes,» and so on. Encourage students to be as creative and outrageous as possible!
- 7 For each story starter the group should go around twice before turning over the next card.
- 8 Give the groups approximately 4–5 minutes for this activity.
- 9 Invite the students to share their best/funniest story. Then use this as a link into the rest of the lesson on idea generation and brainstorming in particular highlighting how diverse interesting and different their ideas were.

ACTIVITY 3 ●●

Game – 10 min

- 1 Invite your group to spread throughout a large open space.
- 2 Instruct your group to walk when you say «WALK» and to stop walking when you say «STOP».
- 3 Issue a series of these two commands, in any order, for 20 to 30 seconds to help your group practice responding.
- 4 When ready, announce that you will now swap the meaning of these commands, so «WALK» means stop walking and «STOP» means to walk.
Challenge your group and each individual to continue to be as accurate and as fast as possible responding to each command.
- 5 When ready, announce two new commands:
 - «NAME» invites everyone to say their own name out loud;
 - «CLAP» invites your group to perform one simultaneous clap;

- Practice these two new commands together with «WALK» and «STOP»;
- Finally, announce you will swap the meaning of the last two commands, e.g. when you call «NAME» everyone claps, and vice versa;
- Continue playing for several minutes, and / or try a variation.

ACTIVITY 4 ●●

Brainstorm – 20 min

Ask students what brainstorming is and if they can give examples of times when they have used brainstorming.

TEACHER EXPLAINS STUDENTS – Brainstorming rules:

Use their ideas to clarify understanding that: Brainstorming is where an individual or a group of people come up with as many new ideas as possible around a specific topic or problem.

Introduce the 4 rules of brainstorming

- Go for large quantities of ideas (the more the better)!
- There are no bad ideas (all ideas get recorded – if working on your own do not edit out ideas and if you are in a group do not criticize others ideas or make judgments)
- Encourage wild and exaggerated ideas (anything goes in brainstorming)!
- Capture everything – every idea must be recorded!

Group Brainstorming

- 1 Divide students into teams up to 5 people (or pairs or triples).
- 2 The task of following to the rules, however, they can freely record all their ideas.
- 3 Give each team paper and pen (they can choose which member will record ideas).

1st task (one question for all, brainstorming as teams):

- 1 Teacher selects a question from the list and writes on the board: «How can we make a pig fly?»
- 2 Students have 5 minutes to come up with a solution. The teacher monitors the work of the group.
- 3 Stop students after 5 minutes, calculate total number of proposed solutions by each team. Each team presents 3 best solutions.
- 4 Ask students how they can be more creative? In brainstorming, all ideas can be useful, even those that seem crazy: sometimes we limit our ideas – we edit out ideas that are not yet possible or seemingly odd. For example, did anyone suggest something like – you could put bacon in a plane! Entrepreneurs often come up with ideas that seem odd or not possible but overtime these can be amazing solutions.

2nd task (a different question for each team, brainstorming in teams):

- 1 The teacher selects a different question for each team.
- 2 Students have 5 minutes to come up with a solution.
- 3 Each team presents the question and 3 the most interesting answers.

3rd task (the question is one for all, but everyone works for the team individually):

- 1 The teacher selects and writes on the board for all one question from the Brainstorming Topics List.
- 2 Each team has 1 sheet: the first team member writes his idea, then passes on to the next, continue doing rounds until the papers returns to their starting point. If you have groups of different sizes, simply stop when the smallest group finishes – 5 min.
- 3 The last student from each team reads all the ideas of their group.

ACTIVITY 5 ●●

Discussion – 10 min

Ask students to compare the two methods used so far (open group brainstorming and brainwriting), the following questions can be used for discussion points:

- 1 Which method gave them more ideas as a whole group?
- 2 Which method gave the group a bigger variety of ideas?
- 3 Which method did individual students find more helpful for them to give more ideas?
- 4 In what ways was brainwriting a different experience to group brainstorming? Did anyone prefer one method to another? Why?

ACTIVITY 6 ●●

How to deal with a lot of ideas – 15 min

Mind mapping creation

We try to brainstorm and find out new ideas in our group.

One more technique of coming up with new ideas by yourself is a mind map.

It is an easy way to brainstorm thoughts organically without worrying about order and structure. It allows you to visually structure your ideas to help with analysis and recall.

A mind map is a diagram for representing tasks, words, concepts, or items linked to and arranged around a central concept or subject using a non-linear graphical layout that allows the user to build an intuitive framework around a central concept. A mind map can turn a long list of monotonous information into a colorful, memorable and highly organized diagram that works in line with your brain's natural way of doing things.

The mind map can be used as a simplified content management system (CMS). It allows you to store all your data in a centralized location to stay organized. With the various mind mapping

software programs out today, you can attach files to different branches for even more flexibility. You can also change to various different views in order to find one that suits you best.

Why Mind Maps Are Effective?

Mind maps are extremely effective for taking notes, planning a project, brainstorming an idea, presenting information to others, and many other uses. Why is this? Here are a few reasons:

- They improve our capacity to see the bigger picture.
- They help us save time by focusing on key issues.
- They improve our ability to retain and recall information through patterns and associations.
- They help to clarify thinking.
- They provide concise, visual information maps that are well-suited for presentations and reports.

Show your students pictures of mind map from the presentation in folder Lesson 1 «Mind map»

Ask them to start to think about their hobbies and start to create the mind map of their everyday tasks and nearest future plans.

Students also could use the mind map for their studying process for planning their project time.

Brainstorming Strategies

Group Brainstorming ●●

In group brainstorming, there are some techniques you can suggest students a way to increase participation:

- Use the «Yes and...» technique to set a positive tone and stop criticism and language that can deter others. When they practice this, students acknowledge the contributions of others and build on ideas. A «Yes and...» brainstorm might look like this if students are talking about developing a new type of classroom chair:
 - Student 1: I think customers want an inexpensive option.
 - Student 2: Yes, and it should be easy to deliver.
 - Student 3: Yes, and it should come in both pink and green.
- Along those same lines, remind students to build on each other's ideas. Brainstorming for idea generation doesn't have to result in ideas that are completely unique. The goal is to get lots of ideas on the table and students should explore, add to, amend, delete, revise, and revamp other ideas they hear.
- Have students record ideas in different ways – writing and drawing on big pieces of paper, with markers and gel pens – anything to step out of the regular notetaking process.

Brainwriting ●●

Brainwriting is an idea generation method that encourages participation. Each individual participant is given a piece of paper and they write the question/problem at the top of the page. Each person then spends a few minutes writing down their own ideas on

Appendix 1

the piece of paper. They then pass their paper on to the next person to read. That person will add ideas to the new piece of paper. Everyone continues passing on their pieces of paper until everyone has written on every page. The papers are then posted in a central location so the ideas can be shared and used for further discussion. Brainwriting is particularly useful when some individuals are hesitant for whatever reason (e.g. self-conscious, shy, afraid to look stupid or silly, embarrassed etc.) in giving ideas and so unlikely to contribute in traditional group brainstorming sessions.



At VentureLab, we specifically make sure to include these types of practices so that girls and young women don't feel bulldozed and quieted in class by their male peers. We encourage you to be aware of and encourage participation by all students.

Brainwriting also works in workplace settings to overcome issues caused by authority and dominance by certain individuals. Brainwriting is important because it's a way to experience the practice of one person's ideas contributing to another person's ideas.

Role-playing ●●

Role-playing involves participants taking on a role while brainstorming. This is used to encourage looking at a problem or situation from many different perspectives. It can also help participants break free from their normal roles, have fun, and be more creative. Roles can be given to create different but realistic

perspectives such as customers, employees, etc. Role-playing can also include looking at something from the perspective of a superhero or cartoon character to encourage more creative thinking and spark new ideas. Role-playing can be taken beyond the brainstorming session to include acting out certain roles and interacting with each other to explore a problem further.

Reverse Brainstorming ●●

Reverse brainstorming is the process of looking at a problem backwards. Instead of trying to come up with ideas for solutions, participants come up with ways to cause the problem or to make the problem worse. Once you have identified as many different ways as possible to cause the problem or make it worse, you then spend time reversing each of those ideas. This is a particularly useful technique where participants are struggling to be creative in the brainstorming process and are being too analytical or judgmental. It also helps to take a different perspective in order to come up with additional ideas.

Appendix 2 (group Story Starter Cards)

<p>Last Tuesday I got into my space rocket and flew to the moon...</p>	<p>I was sitting at the bus stop waiting for my bus when an elephant walked by...</p>	<p>I sat down on the grass, popped open my soda and...</p>
<p>I was sitting at home and watching TV, when I heard an enormous crash from outside. I ran to the window and...</p>	<p>I was diving in the Great Barrier Reef, exploring the coral when I came across a shipwreck...</p>	<p>Last sentence, period. Essay complete. Uh oh – it got deleted! All of it has disappeared...</p>
<p>I walked into the cafeteria, lined up to get food, and went to sit down in the seat near the window. When I turned around everyone in the lunchroom was...</p>	<p>I was driving down the street with my family when a huge crater appeared in the road in front of us. We screeched to a halt...</p>	<p>The waves crashed, the salty air filled my lungs...</p>
<p>I could hear the sound of the leaves rustling in the breeze, I could smell the blossom...</p>	<p>The car started making a strange sound and then suddenly stopped. We were in the middle of nowhere...</p>	<p>I climbed up to my treehouse, looked inside and saw...</p>

Lesson Project Time based on IDEA GENERATION

Total Duration – 1 hour 20 min.

ACTIVITY 1 ●●

Instruction time – 30 min

На першому занятті по проектах вчитель розповідає учням, що протягом табору на них чекає 7 практичних занять, під час яких учні в командах зможуть створити власний прототип додатків.

Для цього ми розповімо та спробуємо розібратися у двох важливих темах: Internet of things та Application development.

Вчитель показує 2 презентації про IoT та AD на 10 хв та показує відео від команди Київстар з інформацією про типи додатків загалом та реальними прикладами вже існуючих аплікацій Київстар.

Після цього вчитель оголошує учням, що вони діляться на команди. Далі, за допомогою технік Idea generation (які вони пройшли на першому теоретичному занятті), учні розпочинають брейнштормити над ідеєю свого додатка. Основне завдання протягом 7 занять:

- придумати додаток для Київстар і залучити використання зв'язку;
- зняти відео презентацію та представити свій проект;
- завантажити відео-презентацію на Facebook-сторінку.

Презентувати свої проекти учні будуть вкінці табору у форматі відео та спікера від команди, який зможе розповісти про ідею. Ці відео учні зможуть опублікувати на сторінці Facebook-групи для усіх шкіл, які беруть участь у програмі. Відео-презентації проектів, які наберуть найбільше голосів, отримають приз для своєї школи.

Детальніше – за посиланням: <https://goo.gl/bk8qtv>
(вчитель відтворює по черзі відео 1 – Application development, відео 2 – Creative thinking. Як створювати відео?)

Також учитель роздає / надсилає учням матеріали (презентацію та методичку з інформацією про IoT та AD), щоб учні могли самостійно вивчати цю тему протягом 7 занять та шукали нову інформацію, яка допоможе реалізувати їхній проект та створити прототип додатка на обрану тему.

Вчитель ділить учнів на команди, у складі яких вони працюватимуть до завершення своїх проектів.

ACTIVITY 2 ●●

Гра «Скрепка» – 10 хв

Учитель дає завдання учням придумати якнайбільше ідей того, як ми можемо застосувати скрепку в реальному житті (окрім її основного канцелярського призначення).

Команда має 5 хв для того, аби придумати та записати якнайбільше варіантів застосування скрепки.

Після цього усі команди по черзі називають число СКІЛЬКИ вони придумали застосувань для скрепки і зачитують свої ідеї.

ACTIVITY 3 ●●

Brainstorm – 20 хв

На попередньому занятті учні вже пройшли техніку Brainstorm.

Протягом 20 хв команди обговорюють актуальні потреби, які, на їхню думку, можна вирішити за допомогою створення додатка: сфера, функціонал, яку проблему вирішує / як допомагає.

Їхнє завдання придумати та втілити інноваційне рішення для зміни ситуації.

Команда пропонує та записує якнайбільше ідей про те, який додаток вони хочуть створити.

Кожна команда по черзі оголошує вибрану проблему, над якою буде працювати (5 хв).

ACTIVITY 4 ●●

Робота над логотипом – 20 хв

Команди наприкінці роботи над проектами будуть презентувати ідеї додатків. Для повноцінної презентації вони отримують завдання створити логотип.

Учитель може продемонструвати логотипи інших додатків, запитати, які логотипи відомі учням, чим вони цікаві, чи подобаються їм.

Учитель роздає матеріали для логотипів (білий цупкий папір та картон, фарби, олівці, фломастери, інше).

Учні працюють над логотипом їхніх додатків (продумують, ЩО він означатиме та як вони його хочуть зобразити / намалювати).



Day 3

Topic #2 INTRO TO ENTREPRENEURSHIP

Total duration – 1 h 20 min

Lesson preparation (task for teacher and volunteer):

- 1 Read through entire lesson.
- 2 Gather materials.
- 3 Print / make copies:
 - Team Observation Card (in folder PRINT – ACTIVITY 1).
- 4 Familiarize yourself with video (explanation):
 - https://www.youtube.com/watch?v=H0_yKBitO8M
 - The team Observation card.
 - All explanation of discussion session (TEACHER PART).

ACTIVITY 1

Storytelling – 15 min

Background – Teacher can tell students about it

Throughout this introductory lesson on entrepreneurship, it is important for students to begin to understand the approach to entrepreneurship. Entrepreneurship is traditionally related to setting up a company and entrepreneurs are the people that bring the resources together to set up the company and make a profit. When you introduce the lesson to students, it is likely that they will have this type of understanding of entrepreneurship.

We aim to give young people the opportunity to experience and develop an entrepreneurial way of thinking and behaving that will be valuable to them whichever career path they choose. It is important to emphasize that this lesson and the rest of the lessons will help them experience and develop their entrepreneurial skills and way of thinking – rather than the specifics of creating a business or starting and running company.

KEY TERMS – Teacher Ask And Explain Them to Students

Design Thinking means considering the end user or customer's needs and incorporating them when developing a solution. Entrepreneurs can use a design-thinking approach to develop products and services that solve real needs.

Entrepreneurship isn't just about starting companies; it is a skill-set and a way of thinking. The core of entrepreneurship is building a solution to a problem and taking the necessary steps to make it a reality.

Entrepreneurs spot an opportunity and develop a vision for a new product, business or solution and put together all the resources needed to bring their ideas to life.

Growth mindset is a way of thinking that means that your brain is capable of learning anything (compared to a FIXED mindset where you believe you are born with certain abilities or skills and that you are incapable of improving in certain areas).

Iteration is the process of making small or quick improvements to a product or service. Entrepreneurs learn from each «iteration» in order to continuously improve their product or service.

Prototypes are simple models entrepreneurs use to explain their idea, get user feedback, and learn how their product needs to be tweaked.

Teacher shows students the Kyivstar video about entrepreneurship, how people come up with ideas, and that every big company started from a very small startup.

Вчитель відтворює відео під назвою «Kyivstar. Просто ділитися найкращим» за посилання із папки: <https://goo.gl/bk8qtv>

ACTIVITY 2 ●●

The marshmallow challenge – 25 min

Introduction

Students work in teams to complete a challenge to build the tallest free-standing structure out of dry spaghetti noodles that also supports the weight of a regular-sized marshmallow. Along the way, teams will be asked to reflect on what they've been doing and how they're feeling as they experience what it means to have an entrepreneurial mindset. It will also help students start building some key entrepreneurial skills including creativity, teamwork, and prototyping.

Materials

- Pens/pencils.
- Marshmallow Challenge Materials (1 set per group):
 - 20 uncooked spaghetti noodles;
 - 1 yard of string;
 - 1 regular size marshmallow (not mini).
- 1 Team Observations Card (print 1 for team).
- Measuring Tape/Stick.
- Timer.

Instructions in detail

Get Ready – 5 min

- 1 Have students get into groups of 3-5.
- 2 Briefly explain to students that they are going to do an entrepreneurial challenge – ask students if they have heard the word «entrepreneur» before and take a few answers/ideas. (Keep this brief, as the idea is they have the experience of the activity to help them more fully understand entrepreneurship).

- 3 Explain that in today's lesson they will experience what it is like to be an entrepreneur and they will learn more about how people who are entrepreneurial think and behave. Emphasize that being entrepreneurial isn't just about setting up and running a business; whatever they choose to do in the future, they will benefit from these skills and ways of thinking (mindsets)!
- 4 Explain the Marshmallow Challenge: tell students that they will work in teams to build the tallest tower possible that can hold a marshmallow on the top. They will only be able to construct the towers with the materials provided.
- 5 Let students ask questions as needed. Make sure that they understand that:
 - Towers must be free standing – they cannot be stuck down/taped down or suspended.
 - Teams can only use the materials they have been given (20 spaghetti noodles, masking tape, string, and one marshmallow) but they do not have to use all the materials.
 - They can use the materials in anyway they'd like (except for anchoring or suspending the tower) – for example, they can break the spaghetti into smaller pieces.
 - The tower must hold the marshmallow on top and still stay standing. The marshmallow has to stay in one piece.
 - The winning team is the one with the tallest tower that holds the marshmallow on top.
 - Let students know they will have a total of 18 minutes for the challenge, including both planning and building the tower.
 - Hand out the Team Observations Card (print Appendix 1). Let students know that at 2 points during the activity, and then at the end, you will ask them to reflect on their progress and thinking.
 - Each time you ask students to record, a different team member should be the recorder.

- Have the groups take a minute before the activity starts to assign when each person will be the recorder and have them write the names down next to the «Recorder» notes in each time box.
- 6 Explain that you will tell the recorders when to ask the group the questions on the Team Observations Card, they will ask the questions and note down answers while the rest of the group continues building the tower.

Start the Timer (18 minutes)

- 1 Give out the sets of materials to each group, make sure everyone is ready, and start the Timer.
- 2 At 6 minutes ask the recorders to ask their teammates questions using the Team Observations Card.
- 3 Repeat the above step at 12 minutes.
- 4 At 17 minutes let groups know they have 1 minute remaining.
- 5 At 18 minutes, tell all groups to stop what they are doing and stand back from the towers.
- 6 Ask the final recorder to complete the last section in the Team Observations Card.

Measure the Towers (5 minutes)

- 1 Go to each tower and determine whether it is free standing and if it is holding the marshmallow. If it is, measure the tower's height.
- 2 Record the results somewhere for the whole group of students to see.
- 3 Announce the winner!
- 4 Ask students to review the notes on the Team Observation Cards before the debrief. This will help students settle down after the final countdown excitement and give them a chance to think about the activity.

ACTIVITY 3 ●●

Post-activity discussion – 20 min

During the discussion, students should gain some insight into what it means to be an entrepreneur and make connections between the experiences and feelings they had during the marshmallow challenge with entrepreneurial skills and mindsets. Students can use their own reflections and the team observation notes to help them participate in the discussion.

Look for opportunities to link student responses and experiences to developing an entrepreneurial mindset and skillset by focusing the discussion on the two discussion themes.

Важливим етапом цієї гри є обговорення!

Далі наведено запитання, які задає вчитель, учні відповідають. Для вчителя також подано відповіді. Якщо діти потребують додаткового пояснення завдання – повторіть його українською мовою. Те ж саме стосується обговорення: якщо учні не володіють англійською мовою на достатньому рівні – проводьте обговорення українською мовою.



Discussion Theme #1

How did you do the task?

What did they do in the time they were given?

Ask each team to briefly describe how they used the 18 minutes. They can use the Team Observation Card to help them. Have them explained what they accomplished or did in the first 6 minutes, between 6-12 minutes, and between 12-18 minutes. This helps students to reflect on what happened in their team and see how teams approached the challenge in different ways.

Compare and contrast what the groups did during the challenge.

Try to highlight the different stages they likely went through: planning, prototyping, testing and emphasize the importance of teamwork.

Planning

Ask the group:

- How long did the different groups spend on planning or talking about what to do?
- How useful was it to spend time talking and planning? Why?

Можлива відповідь вчителя (вчитель пояснює учням):

Probe why some groups spent a long time planning – it is often because they are trying to get the perfect plan before they start or they fear to get it wrong.

Key Takeaway

Entrepreneurs start making as soon as possible. When you start creating earlier, you identify problems sooner rather than later! Sometimes people plan for a long time because they are afraid of making mistakes so they try to get the perfect plan or design. But, entrepreneurs know that in the early stages, they are bound to make a lot of mistakes, but will learn important things from their mistakes. Detailed planning often comes later in a project.

Prototyping (building/making the tower)

Ask the group:

- What are «prototypes»? – If they don't, explain that prototypes are simple models entrepreneurs use to explain their idea, get user feedback, and learn how their product needs to be tweaked.
- When did each of the groups make their first prototype?
- How many of the 18 minutes did they spend making / building their towers?

- Did any of the groups change their design or rebuild their tower?
How many times? Why did they change the way they were building it?

Key Takeaway

Entrepreneurs make many prototypes and improve on them as they gather more information. This repetitive process of making and revising prototypes is called iteration. Entrepreneurs learn something from each new prototype (or «iteration») in order to ultimately make something better than their original designs.

Testing

Ask the group:

- When did the groups first try to put the marshmallow on top of the tower?
- How many times did they test using the marshmallow?
- If any of the groups waited until the end to put the marshmallow on, why did they wait and what impact did it have?
- What were the benefits of testing early?

Key Takeaway 1

Entrepreneurs test early. It's likely that successful groups in the challenge tested to see if the tower could hold the marshmallow at some point before the end of the activity. If the tower could not hold the marshmallow, they might have changed the design before time ended.

Emphasize that entrepreneurs test, observe what happens and get valuable feedback so they can adapt and improve.

Key Takeaway 2

You may find you want to take the discussion of testing further and relate it to all areas of product design and development.

Entrepreneurs use what is called a design-thinking approach to developing products and services. When entrepreneurs use design-thinking, they consider solutions to problems and match what they can make with what their customers need. In the marshmallow challenge, those with an entrepreneurial mindset probably focused on making sure the tower met the specifications: tall and able to hold the marshmallow! When you adopt design-thinking strategies, you learn that if you don't check what your customers need or want, you may miss something or get it wrong.

Teamwork

Ask the group:

- What other things helped groups be successful (e.g. did certain team members have particular skills or experiences)?
- How well did the team work together?
- Did they collaborate (use each other's different ideas and skills) or did individuals make decisions/do things on their own? Why?

Key Takeaway

Many factors contribute to success, especially past experiences and technical skills. There may be some students who have done a similar challenge or have a lot of experience with building models. How did this help the group? Teamwork and collaboration are key entrepreneurial skills. Teams do better if they can use each member's strengths for the group's goal.

At this stage review the discussion so far by considering with students if there is any Link between:

- What groups did in the first 6 minutes and their success?
- How quickly the groups started building the tower and their success?
- How many times the groups tested their tower by putting the marshmallow on top and their success in the challenge?

- How well they worked as a team?



Discussion Theme #2

What problems did the teams face during the challenge?

How did they deal with them?

Tell the group you want to focus on the things that didn't go so well because understanding and dealing with failure is an important part of being successful. That is why they noted down their problems on the Team Observation Card.

Learning from Failure

Ask the group:

- What problems did they have during the different stages of the challenge?
- Specifically, focus for a few minutes on what went wrong and how they «failed». How did they cope when things went wrong? Encourage them to be honest. This is an opportunity to discuss how students feel when things are going wrong and how those feelings affect their responses to problems.
- In what ways did getting things wrong help them in the challenge?

Key Takeaways

Entrepreneurs expect to make mistakes and get things wrong (especially at the beginning of something new). Entrepreneurs are resilient in the face of failure. They show determination and grit to overcome challenges. They stay optimistic about their work and try to solve problems in a creative way. Again, emphasize that these ways of thinking/mindsets can be learned by exposing yourself to challenges – you will see the world doesn't stop if you fail and you usually find out something valuable!

Entrepreneurs see failure as an opportunity to learn. They learn from many small failures and adapt and improve. This leads to better products and a greater likelihood of success in the end.

Ask the group:

- What approach do they think successful people/entrepreneurs have towards failure?

Read out these (or other) quotes to inspire students to reconsider any negative beliefs they have about failure.

From this point reiterate the concept that how we approach a challenge or problem is crucial to our success, and we can learn to approach challenges in a different way.

You may wish to show the «Marshmallow Challenge» TED talk by Tom Wujec to the group if you feel it will help develop their perspective on approaching a team challenge.

ACTIVITY 4 ●●

Elevator pitches – 20 min

- 1 Explain to students that they just had some experience by coming up with new products or ideas based on existing products. When entrepreneurs come up with new ideas they have to make these short persuasive speeches targeted at potential investors (people who might use their own money to fund a new business or venture in exchange for partial ownership).

These speeches are called «elevator pitches»

Why? The «elevator» refers to the amount of time you have to make your pitch – which is about 30 seconds (the length two people may find themselves together in an elevator) – as well as the spontaneous nature of these encounters. You have to be prepared ahead of time and be ready to give the pitch at any time.

- 2 Tell students pitching isn't always about getting investors. It's about speaking persuasively. You pitch yourself on a job

interview. You pitch your skills when you ask for a raise at work.

- 3 Show a pitches ideas video from Kickstarter.

Practice

- 4 Have students create new groups of 4 people.
- 5 Every group have 2 min to create an idea of their new project using for cards:

#1: User / користувач

User: Runner.

#2: One Adjective / один прикметник

Adjective:

#3: One Function (verb) / одна функція,
яку може виконувати, дія

Round.

Function: Blows.

#4: One Material / матеріал

Material: Cloth.

- 6 Example of gameplay:

- Pairs decide on a product or service to create that meets the needs of the user and includes the adjective, function, and material in some way. For example, students could design a jacket for a runner that has round cloth flaps which can be opened when the weather is warmer so that air can circulate better (blows) and be shut when it gets colder.
- Encourage students to think broadly and without limits and constraints (other than the four descriptors).
- They only have 2 minutes to design this product so now is not the time for overthinking!

- 7 Each group have 2 minutes to design a product (sketch on paper) and 3 minutes to prepare a short sales pitch for the product, using the SAME set of criteria from the cards.

Teacher instruction

How to create Pitch Template Worksheet:

- Smile!) Make a personal connection with the audience.
- Ask for a decision: Remind your audience about what's in it for them, if they own this product and ask them to commit by buying or investing in your product on the spot.
- The pitch should include:
 - a description of the product,
 - its real-world purpose,
 - who the customer is,
 - how much it will cost,
 - why people should buy it.

Example

«For the runner who is dissatisfied with having to decide what jacket to wear, our product is a new jacket with round flaps that can open and close to adjust to the runner's comfort.

Instead of having to take off a layer after warming up on a cold day and carrying it with her for the rest of the run, the runner enjoys warming up in comfort, and later has the option of opening flaps to enjoy ventilation. The best part about this jacket might just be the cost.

It sells for only \$35.99».

Decide how to present:

- Pitches don't have to be read aloud, they can be acted out or role-played. Students should decide the best way to present their pitches.

Reminder

- 1 The main idea is pinch! (2-4 sentences about this product).
- 2 It doesn't have to be practical!

- 3 Don't spend a lot of time coming up with ideas! Just go with whatever crazy idea comes to mind. It doesn't have to be practical. Focus more on preparing a great pitch.
- 4 What were the qualities of the pitch that made it effective? (smile, eye contact, confidence, brief and concise pitch, high-value business).
- 5 Express confidence in the value of your product. Your goal is to sell the idea. Find at least 2-3 positive things to say about it.
- 6 Make sure the cost is reasonable.
- 7 Don't read pitch!
- 8 The class will decide between the two pairs:
 - Which had the most interesting product idea?
 - Which had the best elevator pitch?

Post-Activity Discussion

- How often did the pair with the best product idea also have the best elevator pitch?
- Did either of these happen in your group: A good idea that's poorly pitched, or a bad idea that's well pitched? Which is better?
- What did you learn about giving a pitch? What went into a good pitch? What can you learn from the flu bad ones?

Appendix 1

Marshmallow Challenge – Team Observations Card

Complete the Team Observations Card at the set times during the Marshmallow Challenge. This will help you observe and record what your group did. Making accurate observations is a key entrepreneurial skill that helps us to make better judgements and decisions going forward!

Time	Briefly note down what your team has done during the time	Ask everyone in your team what problems or challenges your group is having and record them below
6 minutes Recorder:		Name: Answer: Name: Answer: Name: Answer: Name: Answer: Name: Answer:

12 minutes

Recorder:

Name:

Answer:

18 minutes

Recorder:

Name:

Answer:

Lesson Project Time based on INTRO TO ENTREPRENEURSHIP

Total Duration – 1 hour 20 min

- Вчитель чи волонтер розповідає учням про методіку SCRUM (To Do | In Progress | DONE) – 15 хв.
- Майструємо SCRUM-дошку – 25 хв.

Для кожної команди підготувати:

- 1 ватман;
- олівці, фломастери;
- стікери.

Майструємо SCRUM-дошку ●●

Учні на ватмані розграфлюють SCRUM-дошку і переносять у колонку TO DO усі завдання, які вони вже придумали на попередньому занятті. TO DO – всі ті завдання, які команда повинна виконати, щоб створити їхній додаток.

Як? На окремому стікері пишуть окреме завдання + відповідального за нього учня.

Важливо! Наголошуємо учням, що завдання мають бути якнайточніше деталізовані (розписувати до дрібниць і відразу домовлятися, хто за яку частину відповідає)!

Календар проекту (15 хв) ●●

Вчитель розповідає про календар та важливість планувати завдання в часі, домовлятися, хто з учнів за яку частину проекту відповідає.

Команди готують послідовність дій та дедлайнів з датами, вписують інформацію, що і коли вони планують зробити і вказують відповідальних учнів за кожне завдання. Можна виконати з іншого боку SCRUM-ватману.

Презентація SCRUM-дошок від команд (25 хв) ●●

Важливо запланувати SKYPE CALL з ментором від Київстар. Кожна команда описує основну ідею додатка та презентує свою SCRUM-дошку для інших учасників та для ментора від Київстар по SKYPE. Якщо SKYPE CALL не буде, в такому разі час, який залишається після презентації учнів, використовують на те, щоб продумати функціонал свого додатка.



Day 4

Topic #3 CREATIVE THINKING

Total duration – 1 hour 20 min

Lesson preparation (task for teacher and volunteer):

- Look through entire lesson.
- Print out the materials.

Description

Divide students into teams (under 5 people), for small groups – pairs or groups of 3.

ACTIVITY 1

Theoretical part + game – 30 min

Ask your student to brainstorm on the idea of creativity: 10 min.

These 2 questions teacher should write on a board (highlight words if they are repeated):

- Your first association with the word creativity?
- What does creativity mean to you?

Discuss:

- Is it important? Why?
- When do we use creativity?
- Why creative thinking is important (short article, teacher or volunteer explain this information!):

- link: <https://www.linkedin.com/pulse/why-creative-thinking-important-every-industry-tracy-lee-thomas>
- New Ideas.
- Gets People Inspired.
- Innovation.
- Problem Solving.

Show kids this web-site (it's works of Hristoph Niemann):

<http://www.christophniemann.com/portfolio/sunday-sketches-2>

(He made a challenge to himself: to create new artwork / compositions everyday working on things of everyday use).

Also, tell students that we are going to have a lot of interesting creative tasks during the camp workshops.

Task ●●

Christoph Niemann improvisation – 10 min

- Divide the students into pairs. Ask your student to find out an object around them and let them try to create the improvisation of it (like in Christoph Niemann pictures).
- Let them 10 min. Ask to share their ideas with the campers.

Video – 10 min

Then show them Video from the Kyivstar on how to create video to present your project. There is step by step information which will help students to prepare their own application presentation!

Please, remind students that they have not just to invite and prepare the prototype of the application, but also to present it! And this video lesson will help them!

Teacher could send this video for students as a theoretical material they could use during preparation!

Вчитель відтворює відео під назвою «Creative thinking.

Як створювати відео?» за посиланням із папки:

<https://goo.gl/bk8qtv>

ACTIVITY 2 ●●

Game Wacky invention – 15 min

Prepare all the materials beforehand (bring them before the lesson). These can be books stationary etc.: markers, boxes, empty cartons, ruler, plastic bottle, old cell phone, lego brick, construction block, cup/plate/spoon, hat, scarf, board game/cards.

- 1 Teacher / volunteer divides everyone into teams.
- 2 Teacher displays 3 objects in front of the class.
- 3 Students in teams come up with as many ideas of how to use these objects as possible.

TASKS FOR TEAMS

- Come up with as many answers to the topic as possible during the game.
- After the time is out – teams count the total number of their ideas and present them before others.

ACTIVITY 3 ●●

Active Observation – 10 min

To come up with new ideas it's important to be observant.

Video + Discussion – 10 min

- Displaying a video with the main task of calculating the number of transpires between a team:
https://www.youtube.com/watch?v=xAfYLR_IRY
- Pause a video at 32nd second.
- We ask how many times a ball was passed between people? (Correct answer 13)
- We ask them: «Did you see the gorilla»?

Discuss

- Why do you think people don't notice the gorilla? (the main idea is that their minds were focused on something else, their attention were on a specific task, they weren't expecting something to happen other than the teams passing the balls).

We further explain children that in order to come up and develop their ideas they need to improve on their observation:

«Observation is important because new ideas often come after observing a problem and then trying to solve it. When you focus on just one aspect of a scenario, you may miss out on great ideas!»

ACTIVITY 4 ●●

Observation Test – 10 min

- 1 Display pictures from a presentation on the board (folder OBSERVATION TEST).
- 2 Display the picture, students look at it for 10 sec.
- 3 Display questions on the board? Students write down their answers.
- 4 Return to the first slide and check their answers!
- 5 The presentation is in folder with all the materials.

ACTIVITY 5 ●●

Cooperation Game – 10 min

- 1 Divide your students into the group of 8 or more (if the group is less than 14 people – that let all of them to be in the same team).
- 2 Give them heavy object as in this video:
https://www.youtube.com/watch?v=C4Q_s0_txrQ
- 3 Ask students to sit down and stand up with this object, using just one finger!

«4G in Ukraine»

Total Duration – 40 min

Lesson preparation (task for teacher):

- Look through the entire lesson.
- Prepare the materials: Map of Ukraine, all extra materials must be printed out in advance. Also students will need some paper and color pencils.

ACTIVITY 1 ●●

Introduction – 3 min (warm-up activity)

Ask students:

- Do you use the mobile Internet? How often do you use mobile Internet?
- What are some advantages of mobile Internet?

Tell students that they are going to have a team competition.

Поділіть учнів на команди, залежно від кількості учасників (4-5 учнів у кожній команді). Кожна команда отримує номер. За кожну правильну відповідь команда отримує Kyivstar Coin (Appendix 2). За кожне правильно виконане завдання команда отримує частину тексту, яку зберігає до кінця гри. Перед початком гри вчитель обирає 5 локацій для гри та нумерує їх.

ACTIVITY 2 ●●

Information Quiz – 5 min

Location 1

Each team must answer 3 questions. If students answer all questions correctly, they get a piece of text and continue the game. If students don't answer all 3 questions, they don't get a piece of text, only Kyivstar Coins.

Для цього завдання використовуємо Appendix 1. Вчитель слідкує за часом.

ACTIVITY 3 ●●

Map Game – 10 min

Location 2

Students get cards with Ukrainian city names. They have to spell them in English and tick at the map of Ukraine.

Кожна команда отримує карту України та список міст України, в яких вже є 4G, українською мовою (Appendix 3).

Учні записують назву міста англійською, а потім відмічають його на карті. Вчитель слідкує за часом.

За кожне правильно написане місто англійською, команда отримує Kyivstar Coin. Команда, яка правильно виконала завдання, отримує частину тексту.

ACTIVITY 4 ●●

Ideal Internet – 7 min

Location 3

Students have to invent their super-speed Ideal Internet. They have to describe its unlimited possibilities and design their Ideal Internet logo. Teams make presentations.

За це завдання кожна команда отримує 5 Kyivstar Coins.

Команда, яка першою намалювала лого, отримує частину тексту (Appendix 4).

Вчитель слідкує за часом.

ACTIVITY 5 ●●

Super-Speed Quiz – 5 min

Location 4

Students must answer the questions very quickly, within 15 seconds each.

За це завдання кожна команда отримує 2 Kyivstar Coins.

Команда, яка дала найбільшу кількість правильних відповідей, отримує частину тексту (Appendix 5).

Вчитель слідкує за часом.

ACTIVITY 6 ●●

Creative Superheroes – 5 min

Write a funny dialogue between Cossacks and the Turkish Sultan. Imagine that high-speed Internet already existed at that time.



За це завдання кожна команда отримує 3 Kyivstar Coins.

Команда, яка склала найкумедніший діалог, отримує частину тексту (Appendix 6).

Учитель слідкує за часом.

ACTIVITY 7 ●●

What is 4G? – 5 min

Усі учні збираються на одній локації. Для виконання завдання учні використовують інформацію, яку вони здобули протягом квесту.

Task 1 Students combine the parts they have collected and make the whole text: What is 4G?

Task 2 Students answer the questions (на основі складеного тексту):

- What is 4G?
- When was 2G technology launched?
- What opportunities did 3G suggest us?
- What are the benefits of 4G?

Команда, яка перша дала правильну відповідь, отримує Kyivstar Coins. Переможцем стає команда яка зібрала найбільшу кількість Kyivstar Coins.

Повна версія тексту – Appendix 7.

Учитель слідкує за часом.

Appendix 1

Answer these questions ●●

- 1 What does WWW stand for?
- 2 Name 3 differences between a smartphone and a tablet?
- 3 What is 3G?

Piece of text the winner team gets ●●

Standard 4G (or 4G LTE) is around five to seven times faster than 3G, offering theoretical speeds of up to around 150 Mbps.

That equates to maximum potential speeds of around 80 Mbps in the real world (though even getting speeds that high is rare, and generally requires something like EE's 'Double Speed' or BT Mobile's 'Extra Speed' service).

Appendix 2

Kyivstar Coin ●●



Appendix 3

Map game ●●

БОРИСПІЛЬ	КАРОЛІНО-БУГАЗ	ЛЬВІВ
ВІННИЦЯ	КИЇВ	ОДЕСА
ДНІПРО	КИРИЛІВКА	ПОЛЯНИЦЯ
ЗАТОКА	КРАКОВЕЦЬ	РАВА-РУСЬКА
ХАРКІВ	ХМЕЛЬНИЦЬКИЙ	ЧОП
СТАРОВОЙТОВЕ	ТЕРНОПІЛЬ	УЖГОРОД
УСТИЛУГ	ШЕГИНІ	ЯСІНЯ

Piece of text the winner team gets ●●

What's 4G?

4G is the fourth generation of mobile phone technology. It follows on from the existing 3G (third generation) and 2G (second generation) mobile technology.

Appendix 4

Piece of text the winner team gets ●●

2G technology launched in the 1990s and was capable of making digital phone calls and sending texts. Then 3G came along in 2003 and made it possible to browse web pages, make video calls and download music and video on the move. 4G technology builds upon what 3G offers, but does everything at a much faster speed.

Appendix 5

- 1 Що таке інтернет?
- 2 Чим відрізняється 3G від 4G?
- 3 Чому в літаку необхідно вимикати зв'язок?
- 4 Як технічно вдалося запустити літаки з інтернетом?
- 5 Назвіть 10 міст України, в яких діє 4G.
- 6 Хто вигадав перший телефон?
- 7 Як виглядав перший телефон?
- 8 Назвіть мінімум 5 різних видів зв'язку та передачі інформації?

Piece of text the winner team gets ●●

With standard 4G you can download a 2GB HD film in 3 minutes 20 seconds while it would take over 25 minutes on a standard 3G network.

Appendix 6

Piece of text the winner team gets ●●

What are the benefits of 4G?

The benefits of 4G fall firmly into three categories. These are:

- improved download/upload speeds,
- reduced latency,
- crystal clear voice calls.

Appendix 7

What is 4G? ●●

4G is the fourth generation of mobile phone technology. It follows on from the existing 3G (third generation) and 2G (second generation) mobile technology.

2G technology launched in the 1990s and was capable of making digital phone calls and sending texts. Then 3G came along in 2003 and made it possible to browse web pages, make video calls and download music and video on the move.

4G technology builds upon what 3G offers, but does everything at a much faster speed.

What are the benefits of 4G? ●●

The benefits of 4G fall firmly into three categories. These are:

- improved download/upload speeds,

Appendix 7

- reduced latency,
- crystal clear voice calls.

Standard 4G (or 4G LTE) is around five to seven times faster than 3G, offering theoretical speeds of up to around 150 Mbps. That equates to maximum potential speeds of around 80 Mbps in the real world (though even getting speeds that high is rare, and generally requires something like EE's 'Double Speed' or BT Mobile's 'Extra Speed' service).

With standard 4G you can download a 2GB HD film in 3 minutes 20 seconds on a standard 4G mobile network, while it would take over 25 minutes on a standard 3G network.

Lesson Project Time based on CREATIVE THINKING

Total Duration – 1 hour 20 min

Київстар відео-інструкція – 10 хв

Учні повторно переглядають матеріал, як створити відео для презентації свого додатка: покрокова інструкція. Вони вже проходили цей матеріал на занятті, нагадуємо їм про основні кроки та ще раз вмикаємо відео.

Вчитель відтворює відео під назвою «Creative thinking. Як створювати відео?» за посиланням із папки: <https://goo.gl/bk8qtv>

Робота над завданнями зі SCRUM-дошки – 40 хв

Учні по командах розпочинають роботу над створенням прототипу свого додатка. На занятті «Intro to entrepreneurship» вчитель розповідав учням про прототипи.

Продумують, як вони можуть візуалізувати всі функції, які їхній додаток буде виконувати.

Робота над створенням сценарію для відео-презентації проекту – 30 хв

Команди прописують текст + почерговість зображень та слайдів для відео. Вчитель нагадує учням, що на 8-му занятті по проектах команди будуть презентувати свої проекти у форматі відео.

Day 5

Topic #4 MARKET RESEARCH

Total Duration – 1 hour 20 min

Lesson preparation (task for teacher and volunteer):

- Read the schedule of the lesson.
- Print out materials from folder Print.
- Read the material about the Market Research.

ACTIVITY 1

Storytelling – 10 min

Background – Teacher can tell students about it

Market research is the process of gathering and analyzing information about a market and its customers' needs and wants for a product or service. The aim of the market research is to help businesses make better decisions so that they can be more successful. The world market can be used to describe a range of things that relate to the buying and selling of an entrepreneur's products or services including:

- the competitors;
- the geographical location;
- the volume & value of sales;
- the type of customers target market.

Understanding the breadth of the word market helps students to understand that «market research» covers many

areas. For more information on Markets see Additional Background Information.

Both planning and conducting market research can be challenging topics for entrepreneurs (and students). Market research doesn't neatly fit into one place in the entrepreneurial process and most entrepreneurs carry out many types of market research throughout the process from idea generation to product launch (and beyond). Encourage students to see the market research as an ongoing activity providing a vital feedback loop that will help them develop and improve their product or service and increase their chances of success.

It is worth making students aware that market research often leads to more questions! Students will need to grapple with the reality that they cannot get perfect information and know everything they need to know. If they are creative however they can gain valuable insights into their market and their customers.

This will help them make better decisions, but they should always act with a degree of uncertainty and have to decide which risks are worth taking. And taking calculated risks based on the limited information you have is part of being an entrepreneur.

The one key thing to know is that all entrepreneurs will need to do market research on many different aspects of the market – competitors, local conditions, areas of market growth and decline, and most importantly the customers' needs and wants!

More information about the market research is here (Appendix 1): <https://goo.gl/bueLGR>

ACTIVITY 2 ●●

Describing the market – 20 min

- 1 Show slide 2 – «A Market» and ask students to describe what is happening in the picture: <https://goo.gl/bueLGR> (Document | Slides | Market | Research).
- 2 After taking a few ideas from the group explain that when people are asked to explain the word «market» they often

think of a physical marketplace like the one in the picture and that the common definition for a market is «a place where buyers and sellers meet to exchange goods».

- 3 Move to slide 3 and explain that today many people also think of an online marketplace and ask students to give examples of an online marketplace. The slide includes several examples.
- 4 Explain that this idea of the market as a place that connects buyers and sellers is correct but it does not explain the whole idea/concept of a market. Explain that for entrepreneurs and businesses the world market means much more.
- 5 Students will explore what is meant by the term market and this will help them understand the scope of market research.
- 6 Give out the Describing the Market Student Handout. Ask students to look at page 1 with the market descriptions – 1 per pair/small group (Appendix 2): <https://goo.gl/bueLGR>
- 7 Ask students to read each of the market descriptions and then:
 - Identify different businesses that operate in this market (there are many different options here and some answers will depend on where you live).
 - Students then choose one business and write a description of the customers who they think would buy this business's products (the target market).
 - Give students 6-8 minutes to complete encouraging them to discuss ideas in their pair/small group.
 - As an extension students can come up with their own local business and describe its market and target market.
- 8 Briefly discuss student ideas and answers (use the Instructor Handout to help you).
- 9 Slide 4 Ask students:
 - Why is it useful for an entrepreneur to be able to describe the market in which it operates?

- Why is it useful for an entrepreneur to be able to describe its customers (target market)?

10 Now ask students to move to page 2 of the handout and complete. Explain that research questions are questions that businesses want answered to ideally help them make better decisions.

Give students an example:

A company like McDonald's might want to know: Why is it growing? What particular products have increasing sales? In which countries are sales growing fastest? (Use the instructor Handout for more examples). Answering these questions will help McDonald's make decisions about what new products to develop and where to locate new restaurants.

Instructor Handout (Appendix 3):

<https://goo.gl/bueLGR>

- 11** Give students 6-8 minutes to complete.
- 12** Have a short review of ideas. It is a good time to discuss why students think it is important for businesses to find out about their market and how the researched information will help the business with better decisions.

ACTIVITY 3 ●●

Introduction to Surveys – 10 min

- 1** Explain to students that now they have conducted a focus group and got some new opinions and ideas to help them with their entrepreneurial idea they are going to write a short survey to get further information.
- 2** Explain that a survey involves asking questions to lots of different individuals to find information that will help them make decisions. Surveys can give data (quantitative information)- this means they can find out for example how many people would want to buy a product/want a particular feature, or what prices most people would be willing to pay, etc. The exact

questions they ask should be focused on the information they need to help them make decisions.

- 3 Have students get back into their entrepreneurial groups and ask them to spend 5 minutes deciding on what information they would most like to get from a survey do they need to know more about prices? The product? Completion? Advertising? etc. Have them make a list of the key things they want to find out.
- 4 As a whole group spends a few minutes sharing some ideas about the information.
- 5 Students want to find. If they are struggling you can prompt them with some examples like:
 - How many people would buy your product/service?
 - Which price people would pay/what should you charge?
 - Which feature(s) or the product/service is most important?
 - What produces do people currently buy and why?
 - Where/how should you advertise?

ACTIVITY 4 ●●

Communication Game – 10 min

This simple activity is a fun way to introduce and show the difference between closed and open questions.

- 1 Split your class into two equal groups/teams.
- 2 One person from each team will leave the room for a minute and think of an object (any common object that can be found in any school like a stapler, printer, etc.).
- 3 When each person returns to his team, it's the team's task to ask him/her closed-ended questions (YES/NO QUESTIONS) only to try and find out what the object is. If needed, explain that closed-ended questions are those that can be answered by yes or no!

- 4 Once any team finds the object, this means that they won this round. And they can go for another round.
- 5 After two or three rounds, finish the game and make the following point:

Discussion and debrief:

Tell the group that obviously it took a long time and effort for us to find out the object in each round, but what if we had no time and only had one question to ask to find out the object, what would that question be?

The question would be «What is the object?» which is an open-ended question.

Open-ended questions are an excellent way to save time and energy and help you get to the information you need fast, however closed questions can also be very useful in some instances to confirm your understanding or to help you control the conversation with an overly talkative person/customer.

ACTIVITY 5 ●●

Questionnaire Design – 20 min

- 1 Give out the handout How to Write A Survey to each group (Appendix 4): <https://goo.gl/bueLGR>
- 2 Read through the handout with the class and use the example of Nutriteen to help demonstrate closed questions and how to avoid leading questions. Have students vote down any ideas next to the sample questions on the handout.
- 3 Ask students to work on their project/application teams.
- 4 Remind students that they should aim for most of their questions (6-8) to be closed with 1 or 2 open questions where they are looking for more opinions or ideas.
- 5 Give students 15 minutes to write their survey remind them that they are not trying to write perfect questions.

- 6 Be available to help talk through questions and for students to test out the wording of their questions.
- 7 After 10 minutes remind students to read their questions loud and make sure they each have a copy of the questionnaire!

ACTIVITY 6 ●●

Post-Activity Discussion – 5-10 min

Focus on sharing students reflect both on what they learned and the process of conducting a survey.

- What did you learn from your survey that will help you with your entrepreneurial idea? Share some answers and highlight how useful it is to ask other people.
- What did you enjoy about doing a survey?
- What did you find challenging about writing the questions?
- What did you find challenging about asking the questions? Did it get easier to ask questions? Why do you think it gets easier?
- If you were to write another survey about what would you do differently and why?

Appendix 1

Additional Information on Markets and Market Research ●●

Background

Market Research: Understanding the word «market»

The word market relates to a range of factors, all of which entrepreneurs need to research and understand to help them make the best possible decisions. By understanding these factors, students can identify different areas for market research.

Entrepreneurs may describe and research the market they operate in:

- **By relating it to the industry or product type.**
This helps entrepreneurs to understand who they are competing with and what other businesses make similar products and services.
Example: Sony is in the consumer electronics market with competitors such as Toshiba and Apple.
- **By relating it to geographical location and distribution/spread of the customers.**
A business may operate in an international market, a regional market, or a local market.
Example: Sony operates in an international market as it produces and sells products in many countries whereas a pizza restaurant operates in a local market competing with other nearby restaurants.
- **By relating to the size (and change of size) of the market.**
This helps entrepreneurs to understand if a market is valuable enough to enter – they want to know if there are enough customers to make a profit! Changes in the growth of a market can be an indicator to an entrepreneur that they need to investigate why the change is happening and develop new products and services accordingly.

Appendix 1

Example: The consumer electronics market is expected to increase by 15% by 2020 giving firms like Sony huge opportunities to increase sales.

- **By relating to the customers or «target market».**

In all of the above descriptions, there is an element that relates to the customer e.g. where they are located, what they are spending their money on. However, to be successful, entrepreneurs must understand the needs and wants of their customers in detail. Increasingly, entrepreneurs are recognizing that this means observing customers, speaking to them, and getting feedback as quickly as they can.

Example: a cafe will consider its potential customers needs by finding out about characteristics of people in the local area such as age, income and preferences for foods (e.g. organic) and will use this information to decide on things like what products they sell and at what prices.

Useful Resources ●●

Market Research

A good summary of uses of market research for entrepreneurs:
<https://www.entrepreneur.com/article/217345>

For a relatively simple explanation of market research, try:
<http://www.bbc.co.uk/schools/gcsebitesize/business/marketing/marketresearchrev3.shtml>

Secondary Research

Use this link to get more details about secondary research, its advantages and disadvantages and ways to carry out low cost secondary research.

You may wish to give this link to students if they need to learn more details about secondary research:
<https://www.knowthis.com/data-collection-low-cost-secondary-research/what-is-secondary-research>

Researching Different Business Ideas

If students are looking at making and selling a tech product, here is a great article for them to use that may help them come up with some good research questions:

<https://www.entrepreneur.com/article/235769#>

Appendix 2

Describing the Market ●●

Market Description

Businesses
(Identify different businesses that operate in this market)

Target Market
(Choose one of the businesses from your list and describe the customers for this business's products. Think about gender, income, age, location, interests etc.)

Industry: Fast Food

Geography: International, providing fast food service to customers across the world.

Size: The global fast food market is valued at over \$500 billion and is expected to grow by over 4% in the next 5 years.

Industry: Energy & Sports Drinks Market

Geography: International, manufactures and sells products in a number of different countries.

Size: The USA energy and sports drinks market is valued at over \$25billion. It is the fastest growing sector of the soft drinks market.

Market Description

Businesses
(Identify different businesses that operate in this market)

Target Market
(Choose one of the businesses from your list and describe the customers for this business's products. Think about gender, income, age, location, interests etc.)

Industry: Telecommunications

Geography: Ukrainian

Size: The Ukrainian telecommunication market have more that 55 million users (Kyivstar – 26,5 mln subscribers, lifecell – 8 mln subscribers, Vodafone Industry – 20,8 mln)

Name of Business

Market Research Questions

For each of your chosen businesses identify 2-3 questions they may have about their market and customers? Think about what they would like to find out that would help them make decisions.

Appendix 3

Describing the Market ●●

Market Description

Industry: Fast Food

Geography: International, providing fast food service to customers across the world.

Size: The global fast food market is valued at over \$500 billion and is expected to grow by over 4% in the next 5 years.

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Could include:
McDonald's, Burger King, KFC, Subway

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Target Market
(Choose one of the businesses from your list and describe the customers for this business's products. Think about gender, income, age, location, interests etc.)

Age: Likely Teens (younger people)
Life style: People who are busy/want convenience, people who drive
Location: People living in towns and cities

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Industry: Telecommunications

Geography: Ukrainian

Size: The Ukrainian telecommunication market have more that 55 million users (Kyivstar – 26,5 mln subscribers, lifecell – 8 mln subscribers, Vodafone Industry – 20,8 mln)

Could include:
Red Bull®,
Monster Energy,
Rockstar Energy Drink,
Gatorade®,
POWERADE®,
BODYARMOR

Age: Likely Teens (younger people)
Life style: People who are busy/want convenience, people who drive
Location: People living in towns and cities

Name of Business

Questions should relate directly to the one business chosen. These are generic examples that can be adapted.

Market Research Questions

For each of your chosen businesses identify 2-3 questions they may have about their market and customers? Think about what they would like to find out that would help them make decisions.

Why is the market for _____ growing?

In which countries is the market growing the most? Do any countries have declining sales?

Which _____ products are most popular & why?

Appendix 3

Name of Business

Market Research Questions

For each of your chosen businesses identify 2-3 questions they may have about their market and customers? Think about what they would like to find out that would help them make decisions.

Which business is the market leader? Why?

Who are the main competitors for _____?

What would encourage people to buy more _____?

What trends are affecting the _____ industry?

Could be more specific and relate to trends they know of e.g. what are the healthy eating trends, environmentally friendly trends. Other trends: technology, lifestyle trends etc.

How would an increase/decrease in prices affect sales of _____?

How many sales are made online? How far do customers travel to buy _____?

How are rising/falling income levels affecting sales for _____?

(an interesting point is that the growth of the middle income earners across the world (but not necessarily local to where you live) is a major reason for growth in consumer electronics).

How has social media affected the sales for _____/
the market for _____?

Questions should relate directly to the one business chosen. These are generic examples that can be adapted.

Appendix 4

Writing Survey Questions ●●

Remember writing a survey is difficult! At this stage try to write questions that will get you the information you most need to help you make your entrepreneurial idea successful.

Tips for Writing Your Questions

- Use mostly closed questions (for today aim for between 6-8 questions).
- Make sure a question only asks about one thing at a time.
- Make sure the question gives options and doesn't lead the respondent into an answer.
- Use only 1-2 open questions where you really want an opinion or reason about something.

What are closed questions?

Closed questions give the respondent answers to choose from (respondents can't write their own answers). These are useful because they give entrepreneurs data about their potential customers and their preferences. This is very helpful when making decisions about things like which products to sell, prices to charge, types of promotion to use.

Closed Question Examples For Nutriteen

From their survey Nutriteen wants to find out how many teens would actually buy something that was labelled as a «healthy» snack bar. Below are some sample questions that they might want to ask on their survey.

- 1 Would you buy a snack bar that was labelled «healthy»?
Options:
a) Yes OR b) No

Appendix 4

After conducting the survey, Nutriteen would count up how many people said yes and figure out what percentage of people asked that was. So if they asked 50 teens and 40 said yes this suggests that 90% of teens would buy a snack labelled «healthy.» This data suggests that Nutriteen could be successful – there is likely to be a teen market for healthy products.

- 2 If you were to buy a healthy snack bar how much would you be willing to pay? Options:
- a) Less than \$1.00
 - b) Between \$1.00-\$1.50
 - c) Between \$1.51-\$2.00
 - d) Between \$2.01-\$2.50
 - e) Between \$2.51-\$3.00

From its focus group, Nutriteen found out that teens would pay between \$1.00 and \$3.00 for a healthy snack bar. Now they want to quantify/get data about which price within that range most people would be willing to pay. After seeing how survey participants answered question #2, Nutriteen would then look at the results and see which price people picked the most (and turn this into a percentage). This would give them helpful information for deciding what they should price their products at. It also helps them learn if they are likely to make a profit when they compare costs with potential prices.

IMPORTANT TIP: Before you conduct your survey, make sure your questions make sense. Read them aloud & then ask them to someone else. Sometimes we think we are asking one question but the person who answers thinks you are asking about something different!

Typical Kinds of Questions Used in Surveys

Remember only use questions that will help you with your decisions for your entrepreneurial idea – every survey does not have to have every question type (That would make your survey too

long and take too much time to analyze! The examples below are to help give you ideas for questions to ask.

«Demographic» Questions

These help you learn about the type of person you're questioning. Entrepreneurs can compare the answers of people with different characteristics. Demographic questions ask about things such as: age, gender, household size, income level, profession, education level, location/residence. For example, since Nutriteen's product is a healthy snack bar targeted at teens, Nutriteen may want to compare answers of females and males to see if what, if any, differences there are in things like who will buy a healthy snack and what their preferences of flavors or packaging are.

«Psychographic» Questions

These help you learn about more personal aspects of customers.

Psychographic questions might ask about things such as: attitudes, opinions, interests, hobbies, opinions, political views.

For its healthy snack bar targeted at teens, Nutriteen would be interested in the hobbies of the respondents. They could then look at the hobbies of the people who would buy the healthy snack and see if there are any common types of hobbies e.g. whether they play sports. This would help them with marketing decisions and where to try to distribute their product.

«Buying Pattern» Questions

The goal of these questions is to learn more about what your customers are looking for (preferences) and what they currently spend their money on (habits).

«Buying Pattern» questions might ask about things such as: what potential customers buy, how often, what prices they would pay, where they purchase products.

Appendix 4

For its healthy snack bar targeted at teens, Nutriteen might be interested in how often people buy snacks bar. So they might ask:

How often do you buy snack bars?

Options:

- a) Every day
- b) Every 2-3 days
- c) 1-2 times per week
- d) Less than 1 time per week
- OR
- e) Never.

Nutriteen might also be interested in where to sell their snacks bar, so they might ask:

When you buy a snack bar where are you most likely to buy it from?

Options:

- a) Local Store
- b) Supermarket
- c) Coffee Shop
- d) Café
- e) Vending Machine
- OR
- f) Other (If other, please state: _____).

«Benefits» Questions

These questions ask customers to consider what they like about products and what they would want in future products.

Benefits questions might ask about things such as: what features people are looking for, problems they have with what they currently purchase, reasons why they buy a particular product.

For its healthy snack bar for teens, Nutriteen might be interested in what would encourage people to buy a healthy snack bar and ask the question below.

Which of the following is most likely to encourage you to buy a new healthy snack bar instead of the snack bar you currently buy? You may choose more than one option.

Options:

- a) Lower price
- b) Better taste
- c) Bigger size
- d) Lower in sugar
- OR
- e) Other (please state: _____).

Lesson Project time based on MARKET RESEARCH

Total duration 1 год 20 хв

Draw a Vase – 10 min

For the first round of this exercise have everyone take out a piece of paper and ask them to draw a vase. Once they are finished have them post what they drew on the board. For the second round have everyone design a way for people to enjoy flowers in their homes and post it on the board. Compare the two drawings and discuss how reframing the question affected the proposed solutions.

Фіналізуємо запитання – 10 min

Перевіряємо запитання, які учні підготували по командах під час заняття Market research.

Команда зводить запитання, які стосуються її проекту в єдиний список (у всіх членів команди однакові завдання).

УВАГА! Важливо пояснити та нагадати учням, що питання повинні бути відкритого типу (на які не можна відповісти так / ні).

Інструктаж: «Як ми опитуємо перехожих» – 10 min

Вчитель готує основні правила:

- Працюємо в парі.
- Вітаємося, кажемо що ми учні зі школи, які працюють над своїм проектом «___» і нам цікаво, що про це думають наші односельчани / мешканці нашого міста.
- Учні також самостійно дають ідеї вчителю щодо своїх ідей, як можемо покращити спілкування під час опитування.

Ділимося на пари в межах кожної команди. Команди доповнюють правила власними ідеями.

Опитування – 50 min

Учні йдуть опитувати своїх однокласників, шкільних працівників, працівників магазинів та перехожих щодо своїх запитань.

Day 6

Topic #5 OPPORTUNITY ANALYSIS

Total Duration – 1 hour 20 min

ACTIVITY 1

Storytelling – 10 min

Background – Teacher can tell students about it

Opportunity analysis is the first key step in the process entrepreneurs go through to select ideas to follow through on before doing more detailed market research, prototyping, and testing. Though opportunity analysis is the first step, it is revisited throughout the development process as new information is discovered and the idea becomes more defined.

Opportunity analysis is the process of deciding which ideas represent a market opportunity. A market opportunity is an idea that

- Can realistically be turned into a product or service. This means the technology and resources needed exist or can be obtained.
- Meets the needs of customers who would also be willing to buy the product.
- Can be priced in a way that generates sufficient sales and profits for it to be attractive to the entrepreneur and any investors.

Finding out if an idea represents a market opportunity is not an exact process. There are many factors to consider – students should recognize that by carrying out opportunity analysis they

gain deeper understanding of the idea and its likely success. The process also helps to highlight what is not yet known about the idea and determine where more research is needed.

Entrepreneurs often talk about a window of opportunity for an idea, which refers to whether the timing is actually right to act on this idea. The window (time period) for an idea being a real opportunity for a successful product will depend on many factors such as social, technological, and economic trends, as well as the actions of competitors.

Many entrepreneurs have had great ideas only to have a competitor launch first, thus closing the window of opportunity!

Other entrepreneurs find that the world is simply not ready for their ideas! For example, the idea for Airbnb was developed over 10 years before its launch. The concept seemed great but before the heyday of social media and technology, people could not imagine sleeping in the spare room of a stranger. By the time Airbnb launched, social and technological changes had happened that meant there was a window of opportunity.

Meeting people and connecting over the internet was well-established, and the technology to upload photos and write reviews was readily available. The time was then right for launch, the service was feasible/possible, and there were customers willing to try the service and pay for it!

ACTIVITY 2 ●●

Learning from failure – 25 min

Introduction

Activity 1 is a warm-up activity and preparation for Activity 2 to prepare students for practicing opportunity analysis. The post-activity discussion for this brief activity will help students begin to think about why business ideas may succeed or fail and what businesses can do to try to reduce the likelihood of failure. The discussion also introduces students to the language and vocabulary that entrepreneurs use when conducting opportunity analysis.

Materials and resources:

- Success or Failure Cards – 1 per group. Cut each set into cards (Appendix 1): <https://goo.gl/rXNEyV>
- Success or Failure – Instructor Notes (Appendix 2): <https://goo.gl/rXNEyV>
- Note Paper & Pens.
- Large Paper/Poster Paper (optional). Marker Pens (optional).

Instructions

- 1 Briefly explain to students that during the lesson they will be exploring how entrepreneurs decide if an idea they have for a product or service is likely to be a success. What entrepreneurs want to do is select the ideas that they think have the best chance of being turned into a product or service that people will buy. Then they can focus on developing these ideas. However, entrepreneurs – both new and established – make mistakes sometimes. What is important is to try to learn from errors in judgment and analysis for future endeavors.
- 2 Put students into small groups (2-4).
- 3 Give out one set of Success or Failure cards per group (Appendix 1).
- 4 Ask students to look at the cards and read through the description of the product. Tell students that all of these items and services are real—they were all brought to market. Some failed and some succeeded. Then explain to students that they'll sort the cards into two groups/piles based on which products/services they think were successful and which failed.
- 5 Write or project these two questions to help students decide if an item was a success or failure:
 - Are there customers who would really need or want the product or service?
 - Would customers be willing to pay for the product or service?

- 6 Give students 5-6 minutes for this part of the activity. Though it's quick, make sure students have enough time to justify their decisions about each product/service.
- 7 Ask groups to first share which ideas they thought were a success. Note whether there were there any differences between groups.
- 8 Use the Success or Failure Cards – Instructor Answers to tell students which products were successes and which were failures _____. Be sure to tell students the names of each item on the Success or Failure cards-they might recognize some!
- 9 As a whole group, briefly Look at the ideas that were successful. Have students explain their justifications. If a student brings up a topic or reason that is Listed on the Success or Failure Cards – Instructor Answers sheet in bold.
- 10 If students don't touch on certain vocabulary that is in bold on the Instructor Answers sheet, be sure to introduce that the vocabulary to them. You might say, «Social and health trends were favorable for the Walkman. What do you think that means?» Lead them in a discussion of the fact that aerobics and workouts were very popular in the 1980s, soon after the product went to market.
- 11 Be sure to cover each of the reasons for success Listed on the Instructor Answers sheet. This type of analysis and vocabulary development will help students complete an opportunity analysis of their own in the next activity.
- 12 Now ask each group to go back through the failure cards and decide why they think each idea was a failure. Follow the same procedure as discussing the successes make sure to use the bolded vocabulary and ideas on the Instructor Answers Sheet to help students think about opportunity analysis Like an entrepreneur.
- 13 Ask students what they think an entrepreneur can Learn from failure.

ACTIVITY 3 ●●

Opportunity analysis of an existing product introduction – 50 min

In Activity 2, students go through the Opportunity Analysis process using a 1 case study of an existing product: the Ooho Water Orb. Students will take on the role of expert entrepreneurial consultants asked to carry out an Opportunity Analysis and advise the makers of Ooho on should it to be launched, and if so, what they should do next.

Materials and resources:

- Activity 2 Packet – 1 per student, pages 2, 3, 5, 6.
- Video – <https://www.youtube.com/watch?v=KppS7LRbybw>

Instructions

- 1 Briefly explain to students that before they start the main activity they are going watch a short promotional video about a new product.
 - Play the Ooho Water Orb video: «Scientists have created edible water».
 - <https://www.youtube.com/watch?v=KppS7LRbybw>
 - Ask students for their initial reaction and have them vote on whether they think it is likely to be successful.
- 2 Now ask students to put their own «gut reactions» aside because they are going to look more objectively at the different factors that will likely determine whether Ooho is a success or failure.

EXPLAIN: All entrepreneurs and companies with new ideas spend time investigating their ideas in more detail to decide whether to take any of them further. They do this to find the ideas that will be the most worthwhile investments.

- 3 Pass out Activity 2 Packets (1 per student) page 5 (Appendix 3) <https://goo.gl/rXNEyV> (pages 5, 6).

- 4 Project the Opportunity Analysis Definitions on pages 2-3 of the activity packet or Slide #5 in this Lesson's slide deck for shortened definitions. Ask students to take a Look at the definitions on pages 2-3 in their packets. Read through each part of the opportunity analysis (Demand, Feasibility, Innovation, and External Factors).
- 5 Explain to students that they'll become experts in one area today, but that they need to understand the whole process because entrepreneurs don't look at just one factor to make a decision about their product or service.
- 6 Put students into Consultant Teams (prepared groups of at Least 4 students) and ask each team to nominate a lead consultant (or allocate someone this role).
- 7 Ask students in teams to work on the questions connected to this product (p. 5).
- 8 Then print out the page 6 and let the group work on:
 - Group 1 – Demand,
 - Group 2 – Innovation,
 - Group 3 – Feasibility,
 - Group 4 – External Influences.

(There is a detailed description for the teacher of all these terms).

Presentation

In 7 minutes student present their results.

You may need to help students come to a decision about whether Ooho is a market opportunity. Try to have them consider how many things are in favor of the product and how many are against. Then have them think about whether there is one thing they have Looked at that overrides the other areas.

There is no right or wrong answer – these are the decisions that entrepreneurs have to make. Starting something new never without risks.

ACTIVITY 4 ●●

Analysis – 15 min

Put students into new groups (4-5 in a group) – in each group there must be someone with a smartphone and an application of Lifecell, Kyivstar, Vodafone:

- 1 group analyzes Kyivstar application,
- 2 group analyzes Lifecell application,
- 3 group analyzes Vodafone application.

Ask them during 10 min to analyze these applications according to these criterias:

- Functionality is the sum or any aspect of what a product, such as a software application or computing device, can do for a user (поповнення рахунку, зміна тарифного плану, перевірка балансу, перевірка умов тарифного плану, доступ до платежів, замовлення різних послуг, додаткові інтернет, хвилини, інше).
- User-friendly – simple to install, easy to update, intuitive, easy-to-navigate, effective error handling.
- Design – iOS and Android style, colors, style, icons, buttons, swipes).
- Informative – there is enough information for the user about the mobile operator.
- Stability – without errors, minimalization of failure.

Team 1

Criteria	Kyivstar
Functionality	
User-friendly	
Design	
Informative value	
Stability	

Team 2

Criteria	Vodafone
Functionality	
User-friendly	
Design	
Informative value	
Stability	

Team 2

Criteria	Lifecell
Functionality	
User-friendly	
Design	
Informative value	
Stability	

Then ask them to introduce the advantages and disadvantages of these applications. Also, teams have to tell which characteristics of these applications they would like to take in their own projects.

Appendix 1

1) A portable cassette player – it plays music cassettes that people can listen to through headphones. It was launched in 1979 priced \$150!

2) A super convenient breakfast, where everything you need is all in one package/box: the cereal, milk, and spoon. Priced at \$1.50.

3) An optical head mounted display designed in the shape of a pair of eye glasses. It displays information in a smartphone like hands free format (you can take photos, video, check your apps etc.) and wearers communicate with the internet through voice commands.

4) An online marketplace where guests go to find a place to stay, and hosts list their room/property for rent. As a guest you can go online and find the type of place you want to stay, see photos, read reviews, and then book. As a host you can list your room/property for guests to book. The company charges a small service fee to both the guests and the hosts every time a booking is made.

5) A kitchen scrubber that changes texture depending on how warm the water is. In cold water it has a coarse texture for heavy duty scrubbing and in warm water it is pliable for more gentle cleaning. It won't scratch any surface and washes clean.

6) A set of pens designed specifically for women and advertised as:
«designed to fit comfortably in a woman's hand»
«attractive barrel design available in pink and purple».

Appendix 2

Success or Failure ●●

Instructor Notes

Use the answers and information available here to help add to student ideas about why some products are successful and why others fail. This is a good opportunity to help students build some of the understanding of the language and vocabulary used in opportunity analysis processes. In this discussion try to emphasize that:

- There are many reasons why an idea is a success or a failure.
- Entrepreneurs should try to consider many aspects of a product and investigate them before launching.
- A major reason for failure is that the product design does not meet the customer needs. When making a product, entrepreneurs need to make sure it meets the needs of the customers. To do this, they should get feedback from customers.
- Other reasons for success and failure often relate to trends (external social, technological, economic factors) or to the actions of the competitors.

NOTE: You'll notice some bolded information under each product. This is the specific language that should be taught about opportunity analysis. It's up to you how to present it to students. One way is for them to generate descriptions using their own language and vocabulary and for you to acknowledge what they've explained and to tell them specific business-related term or phrasing. If students don't generate descriptions as suggested below, you can either give a generic description and then offer the vocabulary word or offer the vocabulary word and have them grapple with defining it in context. You know your students' language needs best, so use your judgement – but do make sure to expose them to vocabulary and language in bold below!

Appendix 2

Successful products or services: Items 1, 4, & 5.

Failed products or services: Items 2, 3, & 6.

Successful Products Information and Reasons for Success

1 The Sony Walkman

The Sony Walkman was launched on July 1, 1979 priced at \$150! The Walkman came about because the Sony co-founder wanted a portable way to listen to music that he could take with him while travelling. The design team at Sony came up with the Sony Walkman, a portable cassette player that you could listen to through headphones. It even had an extra headphones jack so two people could listen at once. The Walkman went on to become one of Sony's most successful products ever with over 200 million sold.

Reasons for the Walkman's success:

- Met a customer need: The co-founder of Sony was not the only person who wanted to listen to music or cassettes while travelling. Many people wanted a portable music player!
- Product was feasible and could be developed quickly: Much of the technology needed for the Walkman was already developed. Portable radio and cassette recorders were used by secretaries and journalists. Music cassettes had been available since the 1960s.
- Social and health trends were favorable providing a window of opportunity: Its launch coincided with the aerobics craze and millions of people used the Walkman to make their workouts more entertaining. Between 1987 and 1997, the height of Walkman's popularity, the number of people who walked for exercise increased by 30%.

NOTE: Is the Sony Walkman really a success if it's not still sold?

The cassette player version is no longer sold but Sony sells an MP3 Walkman for digital downloads. No product is expected to last forever and most change and develop as technology improves and evolves. Today, most people listen to music on their cell phones or other portable devices so far fewer people want a separate portable music device. However, in its day, the Walkman was definitely a success.

4 Airbnb

Airbnb founders came up with the idea in 2007 when they had moved to San Francisco and were unable to afford the rent on their apartment. They thought about renting out their spare room to travelers who would find it difficult to afford hotel prices in the area. The company was launched in 2008 but it struggled to raise funds from investors because the thought of staying in a stranger's house was too unusual. Today, though, Airbnb is the world's largest hospitality company, operating in over 190 countries and with a market value of \$26 billion at the start of 2016.

Reasons for Airbnb's success:

- Feasible with technology, social trends in use of internet were favorable, and a window of opportunity: The potential investors who turned down the idea didn't understand how society and technology were changing. People were becoming increasingly more used to connecting over the internet, so staying in a stranger's house didn't seem so weird. Also, the technology to book reservations, write reviews, and upload photos was already very accessible. There was a large market of people with spare rooms or extra property who wanted to make money.

Appendix 2

- Favorable economic trends: Increasing demand for travel especially by young people and retired people.

5 The Scrub Daddy Sponge

The Scrub Daddy Sponge featured on the popular TV show Shark Tank in 2012. Following an investment by one of the Sharks (investors on the show) the product has gone on to become the show's biggest success story with over \$50 million in sales. The sponge was originally developed by the founder for cleaning worker's hands at an automotive factory.

Reasons for Scrub Daddy's success:

- Better design than competitors: The product design is considered by many customers to be far superior to other sponges. It is able to clean in awkward spots and the texture changes mean it is suitable for a range of purposes.
- Entrepreneurial determination: The Scrub Daddy founder is great at pitching the product. Before going on Shark Tank, he sold it in a chain of grocery stores, doing demos to win over customers. He also sold on QVC (the shopping channel) and then pitched on the Shark Tank. The household products market is very hard to break into as most products are made by very large companies with huge advertising and sales budgets.

Failed Products

2 Breakfast Mates by Kellogg's

Kellogg's were aiming to increase their share of the growing convenience foods and snacks market. They launched Breakfast Mates in 1998 but withdrew it 2 years later due to poor sales.

Reasons for Breakfast Mates' failure are thought to include:

- Design didn't meet the needs of the users: The all-inclusive design was meant to be convenient for kids but they had trouble with the packaging. It was hard to open and the milk spilled out when the cover was pulled off.
- If it was taken in a lunch bag/on the go the milk got warm. Though it was safe to eat, people generally don't like warm milk and they think it's unsafe. In turn, if people put the product in the refrigerator, it was no longer the convenient breakfast that you could carry anywhere.
- Price wasn't right: Many customers thought it was too expensive compared to a box of cereal.

3 Google Glass

Google Glass was unveiled in 2012 and won the Gadget of The Year Award. It then went on limited sale in 2013 and was officially launched to the public in May 2014. However, in early 2015, Google stopped making Google Glass. They have said they will keep developing the technology to perfect it and are hoping to relaunch in the future.

Reasons for Google Glass failure:

- Social and Legal issues: People were afraid that someone wearing the glasses would be able to record them without them knowing. These privacy concerns were enough to make people question the product.
- Poor design and didn't meet customer expectations: The glasses had a number of technical faults including a poor battery life. There were a number of bugs that had not been fixed properly before launch.

Appendix 2

- Too futuristic (ahead of current social trends): At the time of launch, people thought the product was too futuristic. It was too far ahead of its time. Since its release and failure, other smart, wearable devices like watches have seen a lot of success. Because the wearable technology continues to be developed it is likely Google Glass will see the light of day again – this time with fewer problems and better applications!

6 Bic for Her Pens

This range of pens designed and targeted specifically at women was launched in 2011. The campaign used advertising slogans like:

- «Designed to fit comfortably in a woman’s hand.» and
- «Attractive barrel design! Available in pink and purple!»

The pens received significant criticism from many women. Many users on social media channels made fun of the concept.

Reasons for Bic of Her Pen failure:

- This is not a totally failed product but Bic has received significant criticism for these pens and has changed its promotion and advertising.
- Outdated view of social trends, including gender norms and issues: Women do not want to be stereotyped as liking pink and purple across the board. More significantly, the phrasing that the design fits «comfortably in her hand» has been taken to mean that maybe women aren’t able to use ordinary pens.
- Lack of research and customer opinion: it is not that a pink pen is a bad product but targeting it at women with what seems like condescending advertising is not going to be popular. Companies need to get the views of their target customers to help them avoid making mistakes like this!

Appendix 3

**Роздукувати для кожного учня сторінки 80-82
(або мінімум 1 копія на команду)**

OPPORTUNITY ANALYSIS DEFINITIONS ●●

Demand

There is demand for a product if there are people who are willing and able to buy it. This means they need or want the product and they will pay for it.

It is not enough that people like it – they actually have to buy it. For example, many of us want a new Ferrari but most of us don't have enough money to actually buy it. So that doesn't count as demand! Also, we may claim to love the idea of a product (a healthy salad) but when we go to the store we buy an alternative (a bagel) that we find better (tastier).

Innovation

Innovation involves taking inventions and turning them into a product that can be sold to customers. Innovation is sometimes confused with invention, which is creating something brand new, creating new things for an existing product, or finding a new way (process) to make things. The microprocessor was a great invention but by itself is was just another piece on the circuit board. The multiple ways it has been used to create hundreds of thousands of products is where innovation comes in!

The best innovations can radically change the way things are made and consumed. Think of the digital camera. Digital technology already existed but engineers at Kodak used it to make the first digital camera where you could view pictures on the display, store them, and upload them to a computer. It was the start of a completely new way to take, store, edit, and print photos and completely revolutionized the photography and film industries.

Appendix 3

Feasibility

Feasibility is all about deciding if making and selling a new product idea is really possible (feasible), given the technology and resources available to the entrepreneurs. To make this decision, entrepreneurs need to understand what is needed to make the product (money, technology, equipment, skills, staffing) on a large enough scale that makes it possible to earn a profit. They also need to know if it is possible to get this final product to the customers so that it can be easily purchased. This often involves finding ways to make sure the right stores/outlets are willing to carry the product. If customers can't buy it easily they will use alternatives!

External Influences

Entrepreneurs do not develop new product ideas without thinking about the world around them. They act upon and react to changes in the wider world. These changes in the wider world (business environment) are known as external influences. External influences change over time, and trends or patterns can be identified in these changes. Entrepreneurs look for these trends to spot new opportunities for products and services. For example, in recent years, people have become more concerned about their health. This has opened up opportunities for a wide range of health-related products like vitamins and fitness tracking devices.

The main external influences to consider are known as STEP:

- **S**ocial Changes – how consumers, households and communities behave.
- **T**echnological – changes in production processes and product innovation.
- **E**conomic – changes in income levels, taxes, and availability of finance.
- **P**olitical & Legal – changes in government policy and laws.

In more recent years many entrepreneurs have started to consider:

- **E**thical – changes in what society regards as morally right or wrong.
- **E**nvironmental – changes in how we use resources and their impact on our environment.

Appendix 3

Notes on video ●●

1) Why are plastic bottles a problem?

The Solution

Ooho Water Orb
The Ooho Water Orb is a biodegradable packaging for water (and other liquids) that is made from seaweed and calcium chloride).

Key Points
about the Ooho:

3) In what ways is the Ooho Water Orb better than a plastic bottles?

2) What is causing the problem Ooho is trying to solve?

4) What are the problems or challenges for the Ooho Water Orb?

Expert Group Note-Taking Sheet ●●

	Notes / Explanation	Decision
Demand Will there be customers who will buy the Ooho?		
Innovation Is the Ooho a truly unique product and solution to the problem of plastic bottles?		
Feasibility Does Skipping Rocks Labs have the skills and the resources to produce and sell the Ooho?		
External Influences (Trends) Is the business environment favorable for the Ooho?		

Lesson Project time based on OPPORTUNITY ANALYSIS

Total Duration – 1 hour 20 min

Гра від вчителя на аналіз інформації – 15 хв

(вчителю необхідно підготувати гру, пояснення та правила)

Аналізуємо напрацьований матеріал з опитників – 20 хв

Вчитель озвучує основні запитання, над якими працює команда:

- Яка проблема? Як ми можемо допомогти?
- Як реагували на нашу ідею люди?
- Які емоції у них були? Що їм сподобалося? Що не сподобалося?

Кожна команда готує таку інформацію: скільки людей загалом опитали, скільком сподобалася ідея та чим? Скільком не сподобалася ідея та чому? + 2-3 приклади цікавих розмов для на-тхнення інших команд.

Учні працюють по командах.

Skype call ментору та обговорення – 20 хв

Презентуємо результати опитування та аналізу для всієї групи. Вчитель обирає почерговість команд, які презентують результати та модерує. Команди презентують результати опитування.

Завершуємо роботу над логотипом проекту – 25 хв

Day 7

Topic #6 DESIGN THINKING AND PROTOTYPING

Total Duration – 1 hour 20 min

Storytelling – 5 min

We define design thinking as an approach to solving design problems by understanding users' needs and developing insights to solve those needs. Design thinking is a process centered on contact, observation, and empathy with end-users. The goal is to find a solution to the problems in their environments. This process differs from trying to compete with other companies or trying to use existing products in new ways. Instead, it's a creative process meant to tailor solutions to peoples' needs.

During our lesson we will define the steps in the process as Empathize, Define, Ideate, Prototype, and Test. It's easy to see how other aspects of entrepreneurship like brainstorming, observation, idea generation, market research, and pitching fit into design thinking. In fact, if you've completed those lessons with your students already, this set of Design Thinking and Prototyping Lessons will feel familiar, as many of the steps rely on the work in those other Lessons. You'll also notice that prototyping is a step in design thinking and yet, we've called it out specifically in the title. That's because prototyping is an important part of the process. Design thinking brings the entrepreneur from idea to finished product or service and encompasses so many of the entrepreneurial mindsets and skills.

In this lesson, students will go through the design thinking process fairly quickly.

They'll learn about a particular challenge faced by a particular group of people and create low-resolution prototypes to represent possible solutions to the challenge. They'll also receive feedback about their solution ideas.

In Activity 3, students will consider the feedback they received in Activity 2 and make changes to their design. Then they will build more robust 3D models of the solution and get feedback. In this activity, students will also consider questions entrepreneurs ask themselves to decide if a solution is worth investing in long-term.

We wanted to introduce students to an abbreviated version of design thinking, so they feel comfortable with all of the steps. Of course, for most entrepreneurs, this process takes days, weeks, and even years. The more feedback the entrepreneur gets, the more changes or tweaks there are to be made. Eventually though, after really thinking through and testing solutions, the entrepreneur eventually gets to the point when it's time to release the product or service.

ACTIVITY 1 ●●

What can you do with a straw? – 15 min

Students will consider how problems can be solved with everyday objects.

Materials and Resources

- Plastic bendy drinking straws, a couple for each student.
- Design Thinking Slides.

Instructions

- 1 Have students sit in a circle.
- 2 Hand out a few straws to each student.
- 3 Ask students to think about ways that bendy straws could be used in a unique way to solve a problem. Give them a minute or two to think about their answers.

- 4 Go around the circle and have each student explain what a straw could do and the problem that it solves.
- 5 Show students some solutions from this website <http://www.instructables.com/id/11-unusual-uses-for-straws>
- 6 Ask students to explain if and how they showed empathy with their solutions. Explain to them empathy is being able to understand and share the feelings and perspective of someone else. It's putting yours in someone else's shoes.
- 7 Now ask students what they'd need to do to make their straw solution a reality. They might use:
 - learn about a market or industry to create the product for;
 - learn more about the problem to make sure it really solves;
 - draw or build their solution;
 - acquire money to build the product;
 - find out if the solution already exists.
- 8 Explain to students that the shared qualities they've just listed are all part of the design thinking process. Herbert Simon, in the «Sciences of the Artificial» (MIT Press, 1969) defined the design «as the transformation of existing conditions into preferred ones» (p. 55). He contrasted design thinking with critical thinking, which he called the «breaking down of ideas». Instead, design thinking is a creative process that BUILDS ideas. Entrepreneurs engage in design thinking because there is no judgment of ideas, just creations of possible solutions. This eliminates the possibility of failure and encourages wild ideas and creative solutions. Simon described design thinking as a seven-step process: Define, Research, Ideate, Prototype, Choose, Implement, Learn.

We will teach it as:

Empathize, Define, Ideate, Prototype, and Test.

Show slides (Appendix 1): <https://goo.gl/eHM6FL>

For the purposes of this lesson, we're going to think about the process in this way:

Empathize (Observe, Research, Understand)

Think about the problems you see around you or know about in the world and Learn about the people they affect.

Define (Synthesize)

Learn what's being done about the problems. Find out why the problems exist.

Ideate

Come up with new and different ways to solve the problems.

Prototype

Build out your ideas into visual or physical representations that show how they'd work.

Test

Get your prototypes in front of people and find out what they like, what they don't like and they solve the problem. With this feedback, you'll figure out if you should bring it to a larger market.

Your students may feel rushed by the timeline in this lesson, but remind them that it's about working together as a team to solve problems and show empathy. The solutions don't need to be perfect the first, second or even third time they try them – that's the beauty of design thinking. Iteration, research, feedback, and testing will eventually lead to some great ideas and viable products, but probably not in 90 minutes – and that's okay.

ACTIVITY 2 ●●

Think, Build, Ask – 20 min

Introduction

Students will learn about the computer technologies learning for elderly people and design new ways for teaching them to use cell

phones, computers, and internet. They'll create 2D prototypes and discuss their designs with others to get feedback.

Materials and resources:

- Video about elderly people using technology.
- Short Background:
 - Prototype Handout – <https://goo.gl/8wHnA7>
 - Prototyping Options Handout – http://provide.smashingmagazine.com/justbuildit_poster.pdf

Instructions

Tell students that many entrepreneurs get started by empathizing with what's happening to people in the world around them. They specifically look for interesting problems they think they can solve.

- 1 Explain to students that they're going to watch a video about elderly people using technology: <https://www.youtube.com/watch?v=zCLYCDXgRxw>
- 2 Ask students to share their reactions about what they saw in the video.
- 3 Explain to students that an entrepreneur might see what Sherpas do and think of a way to improve the process by creating something to make it easier for them to use technologies. During the design thinking process, the entrepreneur would learn as much as possible about the Life of elderly people, the current methods of teaching techniques.
- 4 To come up with some new ways of teaching elderly people using technology the entrepreneur might interview elderly people who live without using cell phones or who can't learn how to use it by themselves. You could ask your classmates who have grandparents or imagine that you are in that ages. The entrepreneur would use empathy to understand the challenges people face when they start to understand something new they have never used before. The entrepreneurs would then take that information and begin to think of solutions.

- 5 Put students in groups of 3-5. They'll use the brainstorming techniques shared in Idea Generation to generate possible solutions for their case. Remind them that during brainstorming, there's no need to limit their ideas or pass judgments on them yet. They want a long list of ideas during the Ideate phase.
- 6 Once students have several ideas, discuss the designing thinking step of prototyping. Show students the Low-Resolution Prototyping Handout (Appendix 2): <https://goo.gl/8wHnA7>

Explain that during early stages of design thinking, entrepreneurs create low-resolution prototypes or models. They don't worry about time to build the actual product or the materials needed to make the final solution. They also don't need to worry about how obvious (or not) the solution is. They just want to sketch and build many options so that they get a different perspective on the challenge and solutions.

- 7 Explain that an early prototype or low-resolution prototype is like a draft. It quickly communicates an idea so that feedback can be gathered and the idea can later be built out with more details. It makes ideas visible to people rather than leaving them in the entrepreneur's brain. Sharing prototypes with others lets entrepreneurs better understand functions or details they haven't thought of. In business, it's believed that it's better for five people to work on a problem for one day than for one person to work on a problem for five days.
- 8 Show students the Prototyping Options Handout (Appendix 3) and quickly discuss some of the options for low-resolution prototyping:
 - storyboarding to show how the product is used;
 - a paper model;
 - a drawing on paper or a whiteboard;
 - a wireframe to show how something might be laid out on a screen;
 - an ad for the product.

- 9 Have teams go through their list of ideas for carrying heavy loads and let each team member choose one solution. Each team member should spend about 5-10 minutes creating a low-resolution prototype.
- 10 Students should present their prototypes to their teams.
- 11 Each team should pick one prototype they think is the best: solution and finalize the presentation.
- 12 Teams should then present their prototype to classmates and get the feedbacks.

ACTIVITY 3 ●●

Change, Build, Test, Ask Again – 20 min

Students will use feedback to revise their prototypes from Activity 2. They'll build more robust solutions, test to see if they work and collect more information from the public.

Materials and resources

Materials for Prototyping: poster paper, markers, sticky notes, tape, construction paper, lined paper, cardboard, scissors, other cutting tools, etc.

Instructions

- 1 Now that student groups have identified a solution and received feedback about it they should regroup and discuss the feedback they received. They may want to scrap their idea altogether and consider a new solution. Or, they may want to refine their idea in some way. As a group, they should create a low-resolution prototype of the revised heavy load solution.

Explain to students that this part of the design thinking process is called iteration. Entrepreneurs learn new things about their ideas and prototypes and make small changes as improvements. At some point, they will decide when to stop making small changes and build the actual product. However, iteration also happens on products that have been released. If you

use a cell phone you know that your apps get updated all the time.

The software company released the app and then iterates changes to make it better and improve functionality. If you're an iPhone fan, the same reasoning holds true. Each version of the iPhone as an iteration. The engineers at Apple listen to feedback, get creative, and add on new features and take away old ones for each version.

- 2 With the changes decided upon, students are ready for more robust prototyping. Show the video about 3D prototyping:

https://www.youtube.com/watch?time_continue=16&v=k_9Q-KDSb9o

Ask them what the benefits of this kind of prototyping are? Answers might include: get an idea of size and actual materials needed and roleplay how it functions.

- 3 Have each team built a 3D prototype of their solution.
- 4 Once models are built, have students share them with others to get feedback.
- 5 Once feedback is collected, have students consider the list of things entrepreneurs have to consider when deciding IF and HOW to produce their solutions. There are a lot! Don't worry if time doesn't allow for you to cover all of them.

The criterias of presentation:

- **Function.**
(How well does it work?).
- **Ergonomics.**
(How efficient/safe is it?).
- **Use cycle.**
(How usable is it? How will people use it?).
- **Cost-effective manufacturing/assembly/packaging processes.**
(What's the cost to build, put together, and package?).

- **Cost effective retail display.**
(How will it be sold in store or to users?).
- **Easy and effective maintenance procedures.**
(Is it easy to set up and take care of over time?).
- **Marketing and cost/perceived value.**
(Do customers think it's worth the cost?).
- **Satisfy relevant industry standards and laws.**
(Does it meet industry guidelines?).

6 Let students know that in order to answer these questions, entrepreneurs have to research things like cost of materials and find out how much money it'll cost to build and ship their product and then how much they'd have to charge to make a profit. If it would cost more to make the solution than people would be willing to spend to buy it, the entrepreneur has to make some decisions about what types of materials to use and if the solution is even worth building. If not, they'll start the design thinking process over again, looking for a new idea.

ACTIVITY 4 ●●

Post-Activity Discussion – 10 min

- What parts of the design thinking process have you experienced today?
- How does design thinking help entrepreneurs?
- Why does design thinking center on problems?
- How does prototyping help an entrepreneur think through solutions?

ACTIVITY 5 ●●

Homework – 5 min

Ask students to test their ideas with their grandparents, neighborhood, elderly people.

Day 8

Lesson Project Time based on DESIGN THINKING AND PROTOTYPING

Total Duration – 1 hour 20 min

Кожна команда повинна спланувати це заняття в залежності від типу їхнього проекту. Учні виконують свої завдання із списку TO DO їхньої SCRUM-дошки.

ВАЖЛИВО! Повідомити учнів на першому занятті роботи над проектами, що ви плануєте таке заняття, і їм потрібно підготуватися заздалегідь.

НАПЕРЕДОДНІ ПОВІДОМИТИ ВЧИТЕЛЯ, що саме команда планує робити під час цього заняття та над чим планує працювати.

Під час цього заняття по проекту команди також доопрацюють за усіма характеристиками свій додаток: functionality, user-friendly, design, easy to use, informative, stability, etc.

Day 9

Topic #7 PUBLIC SPEAKING

Lesson preparation (task for teacher and volunteer):

- 1 Прочитати весь хід уроку.
- 2 Якщо необхідно – наперед завантажити відео, які вкладенні до заняття + підготувати пояснення про що йдеться у відео.

ACTIVITY 1

Introduction – 15 min

Teacher or volunteer explains for students:

<https://www.teachingenglish.org.uk/article/public-speaking-skills> – more information.

Pitching is essentially explaining your business plan verbally. An entrepreneur uses a pitch to summarize their ideas and sell themselves to potential investors. The process is so important to entrepreneurs because a successful pitch can secure the funding needed to launch an idea from theoretical to reality.

In this lesson, students will review the elements of excellent persuasive and public speaking. They'll then compare two pitch videos and list the information that needs to be presented by entrepreneurs to investors. Students will create their own pitch videos and prepare for the presentation (for class, mentor and/or «investors») to get feedback.

Pitching is essentially explaining your business plan verbally. An entrepreneur uses a pitch to summarize their ideas and sell themselves to potential investors. The process is so important to

entrepreneurs because a successful pitch can secure the funding needed to launch an idea from theoretical to reality.

In this lesson, we'll focus on two of the most important background pieces to pitching: Public Speaking Skills and Persuasion.

Tell your student that we are going to talk about speaking

Video: https://www.youtube.com/watch?v=uFE-nosj_RA

Ask:

- When do you use public speaking in your everyday life?
- Why are these skills important for entrepreneurs?
- Which advises did you remember from the video?

Practice, expression, eye contact, don't use your paper, avoid unnecessary movement.

ACTIVITY 2 ●●

Product video presentation – 15 min

In this activity students will analyze the presentation of the start-up and try to focus on their own presentation speech. Show them this video: <https://www.youtube.com/watch?v=zYTEXKvr5OA>

Then ask them to work on their projects team (application development) and analyze the video presentation by answering the following questions:

- Who are you?
- Why should we care?
- What are you selling?
- Who are you selling to?
- Who are your competitors?
- What is the price?
- What do you need?

Each team have to present their results.

ACTIVITY 3 ●●

Public speaking experience – 15 min

Video дивитися з 1:00 по 7:35 хв: https://www.youtube.com/watch?time_continue=1&v=GMWFieBGR7c

ВАЖЛИВО! Переглянути відео наперед і могли коментувати учням.

- 1 Ask: to raise their hands if they felt comfortable speaking in front of the class (or their group) (and in front of a camera) in the last activity?

Tell students that they have to speak in public often during their study and working time (in order to get their projects funded and present your results, or get the scholarship for the program in the university, even to just let people know about their products and services, and they have to speak persuasively (переконливо).

Persuasion is the ability to get someone to think about something in a certain way. People who speak and write persuasively attempt to change the listener or reader's views on a subject or get them to act in a certain way.

- 2 Have students call out the names of people they think are good public speakers. TED Talks often feature great speakers who talk about topics they are passionate about. Another person people listen to is Oprah Winfrey. Tell students they're going to watch a short clip of a speech Oprah gave at the Harvard Commencement back in 2013. Ask students to be thinking about or even writing down some of the things that Oprah does during her speech that make her a good speaker.
- 3 Play the Oprah (commencement speech video from 1:00 to 7:35).
- 4 Have students share things that Oprah did during her speech. Write the List of chart paper while students are sharing. Students might mention things like:
 - She smiled and made jokes about herself.

- She told a story about a failure (a feeling people can relate to) and spoke to the audience using «You» and «Me» to make it personal.
 - She talked about her emotions.
 - She looked at the audience, spoke clearly, and changed her tone of voice, speed, and intonation.
- 5** Ask students to get into pairs and think of other skills that are important for public speaking. Remind students that they're specifically thinking about things an entrepreneur should know and practice while pitching. Give students 2-3 minutes to come up with a new list.
- 6** Bring the whole class back together to add to the list. Your students will probably come up with great ideas.

Then teacher or volunteer explain one more time the main points of public speaking:

- Know a lot about your topic – use facts, statistics, and detailed information where appropriate.
- Plan for the time you have by writing the speech out or have good notes so you stay focused.
- Keep ideas organized.
- Start with a strong opener and use humor (where appropriate) to make it memorable.
- Move around, use your hands (but don't be distracting).
- Be confident – speak clearly and believe what you're saying.

ACTIVITY 4 ●●

Game Which Is A Lie? – 10 min

Explain that we will play this game to let students feel a little bit confident during their public speaking session.

Pay their attention that humor and jokes help the speaker to establish contact with the audience and stop nervous.

This one is generally pretty easy to work out and a lot of fun as well. And you will find that some students do it really well, but then some students just fumble when they are trying to lie and it's quite humorous to watch.

- I am 13 years old.
- I am married with 2 kids.
- I never lie.

Ask every student to think about 3 facts about themselves (but 2 of them need to be true and one of them needs to be a lie).

Ask them to stand up and tell these 3 facts for all.

So they get up and they tell 3 things about themselves and then the audience needs to choose which one was a lie and they see if they were correct.

So this one is really quick, really easy and you don't have to go into a great detail about it but it can be really fun.

ACTIVITY 5 ●●

Persuasive public speaking – 25 min

Remind students of the analyzes they did at the beginning of the lesson.

Now tell them that during next 15 minutes they have to work on their project presentation speech.

Teams should use these question for their preparation:

- Who are you?
- Why should we care?
- What are you selling?
- Who are you selling to?
- Who are your competitors?

- What is the price?
- What do you need?

The speech has to be no longer than 2 minutes.

Teams have to involve all the participants in the preparation + they could prepare some visual materials, cards, images, diagrams, etc.

Ask students to choose two speakers from each group who will be present their results.

Give 15 minutes for preparation.

Then speakers from every team starts to present their application.

ACTIVITY 6 ●●

Post-Activity Discussion

- 1 What was the most difficult part of creating this pitch about yourself?
- 2 How did you feel delivering the pitch?
- 3 What will you do differently when preparing a pitch for your own product or service?

Lesson Project Time based on PUBLIC SPEAKING

Total Duration – 1 hour 20 min

Робота над відео для проектів – 25 хв

Учні працюють у своїй проектній команді.

Деталізуємо проект та готуємося до презентації – 30 хв

Учитель дає командам запитання, над якими вони працюють:

- 1 Як виникла ідея? Яку проблему ми вирішуємо?
- 2 Для кого ми працюємо над цим проектом? Кому це важливо? (Наша аудиторія).

- 3 Яке рішення запропонувала наша команда?
- 4 Функціонал додатка.
- 5 Лого.
- 6 Як ми задіємо використання зв'язку?
- 7 Які завдання нам потрібно виконати, щоб реалізувати проект?
- 8 Що нам потрібно (матеріальне забезпечення)?

Команди до дрібниць прописують проект та візуалізують, створюючи прототип (схемами, малюнками так, щоб усі могли зрозуміти, як буде працювати додаток).

Заключна частина підготовки – 25 хв

Лого, відео та текст для презентації проекту.



Day 10 ●●

Lesson Project Time

Total Duration – 1 hour 20 min

Презентація проектів на закритті табору ●●

Вчитель та учні готують шкільний захід. Команди презентують розроблені ними мобільні додатки для аудиторії (відео та презентація прототипу).

У презентації беруть участь також і ментори проекту від Київстар. Вчитель заздалегідь домовляється про Skype Call з ментором.

The team of methodologists used some free open materials from the [venturelab.org](https://venturelab.org/about) platform: <https://venturelab.org/about>



GO
camp.


КИЇВСТАР