@MARATONA
UNICEF SAMSUNG
Tecnologias móveis nas escolas

2019-2020 EDITION

PRESENTATION OF THE PROJECTS

Initiative

SAMSUNG **unicef**

Technical partners

Softex **CENPEC** Educação

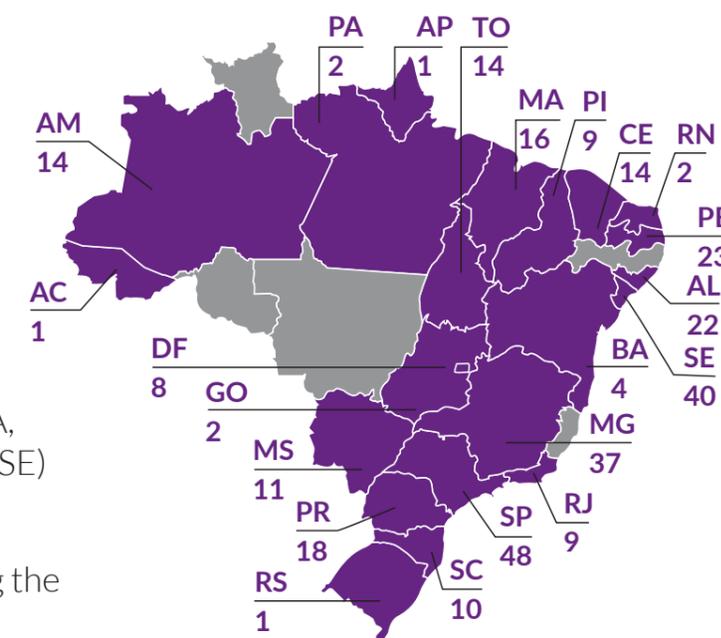## THE MARATHON IN NUMBERS

314 registered teams from 22 Brazilian states + the Federal District

149 pre-selected teams

839 registered participants

19 classified teams from 11 Brazilian states (AL, AM, BA, MG, MS, PB, PI, PR, RJ, SC, SE)

1800 interactions during the mentoring phase

Registered teams per state

PA 2
AP 1
TO 14
AM 14
MA 16
PI 9
CE 14
RN 2
PB 23
AL 22
AC 1
DF 8
GO 2
BA 4
SE 40
MG 37
MS 11
PR 18
SP 48
RJ 9
SC 10
RS 1

Hello! We have reached the end of the 2019-2020 edition of the **UNICEF Samsung Marathon - Mobile Technologies in Schools;** an initiative of the United Nations Children's Fund (UNICEF) and Samsung, with the technical partnership of the Center for Studies and Research in Education, Culture and Community Action (CENPEC) and the Association for the Promotion of Brazilian Software Excellence (SOFTEX).

The marathon aims to foster, in school communities, the development of prototypes of applications for mobile devices that contribute to the learning process of girls and boys from public schools throughout the country. For this purpose, students, teachers, programmers and designers benefited from pedagogical and programming mentoring throughout the creation and development process.

In this second edition, which took place between September 2019 and August 2020, more than 300 teams signed up. Nineteen teams from 11 Brazilian states were selected for the final phase of this edition. The applications that have been developed address the areas of knowledge, competencies and abilities provided for in the National Common Curricular Base (BNCC) for High School – Portuguese Language and its Technologies, Mathematics and its Technologies, Natural Sciences and their Technologies, Applied Human and Social Sciences – as well as the Sustainable Development Goals (SDGs) of the United Nations.

High school and college students, designers, teachers and programmers who participated in this latest Marathon had an extra challenge: to overcome the physical distance imposed by the need for social isolation because of the new coronavirus. However, something that initially posed a major challenge for the teams, soon became a new opportunity for learning and for using the digital tools. The group discussions and application testing, that at first would have taken place face to face, were successfully replaced by online meeting sessions.

We invite you to know all these projects and teams along the next pages. The results that have been achieved demonstrate the commitment of UNICEF, Samsung, and their partners to encourage the capacity building of future generations, so that they can reach their full potential through innovative educational solutions and pathways that can be adopted by schools throughout the country, as well as to promote the leading role of adolescents and young people.

Have a great read!

16 SDGS ADDRESSED

LEARN ABOUT THE APPLICATIONS

n 2020, 19 teams of public schools, from 11 Brazilian states, were selected in the second edition of the **UNICEF Samsung Marathon - Mobile Technologies in Schools**. High school and college students, programmers, designers and educational professionals designed applications in accordance with the topics established in the National Common Curricular Base (BNCC) and the Sustainable Development Goals (SDGs) of the United Nations; these apps will be used in the classrooms of public schools throughout the country. Learn about all the projects along the next pages:

Beijei, e agora?
I kissed someone, and now what?

n a recreational and didactic way, the application informs and encourages the discussion about misconceptions and prejudice related to sexuality, unintended pregnancy and disharmonious relationships. The students – through the use of popular songs – can have access to technical, scientific, biological, and psycho-affective information; gain knowledge to help them recognize and confront violence and gender inequality; and can also understand the concept of women's empowerment. At the same time, they exercise ethical, responsible and preventive behavior.

" *The looks are one of the most important factors of a good application and to reach a composition that would please everyone was not easy. To me, the biggest challenge was to make the artwork and choose the color palette... But the Marathon was an incredible experience, especially because of everyone's teamwork and commitment. My colleagues were amazing! I can only give thanks for the opportunity to have participated in it!"*

CLEBSON ALMEIDA, designer

SUSTAINABLE DEVELOPMENT GOALS

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

6 CLEAN WATER AND SANITATION

Download the app on Google Play:
https://play.google.com/store/apps/details?id=br.com.beijei.app

Biolingue

The application is an interactive game in Portuguese and in the Brazilian Sign Language (Libras) that is intended to provide the students with guidance on Sexually Transmitted Infections (STIs). The player becomes a healthcare worker and has to take actions to prevent and treat diseases such as syphilis and AIDS. The scenario reveals a whole context of vulnerability: poverty and difficulties of access to healthcare services, information and education.

SUSTAINABLE DEVELOPMENT GOALS

Download the app on Google Play:
https://play.google.com/store/apps/details?id=com.Biolingue5.BioLingue
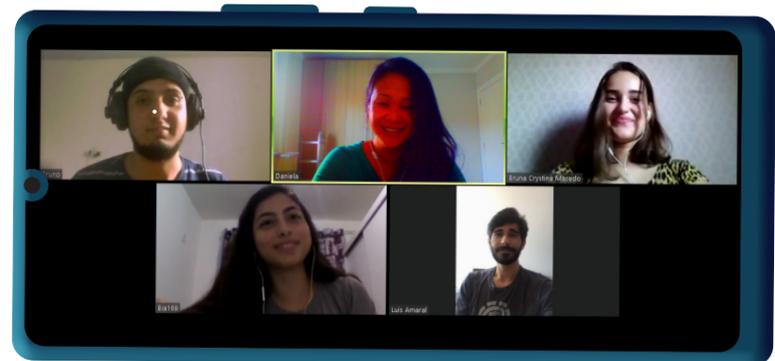
" *The Marathon gave us an incredible opportunity for teamwork. The experience with the students was great! The meetings were smooth, fun, but, at the same time, very productive. They surprised me positively! I was happy to see that they thought about the inclusion of students with hearing loss since the beginning of the project, as they are aware of the difficulty of access to information that they face".*

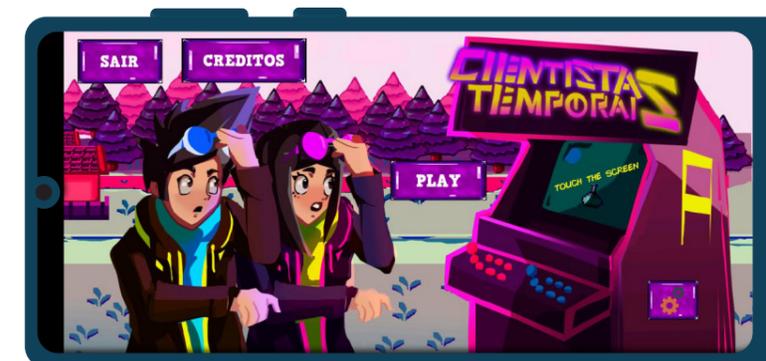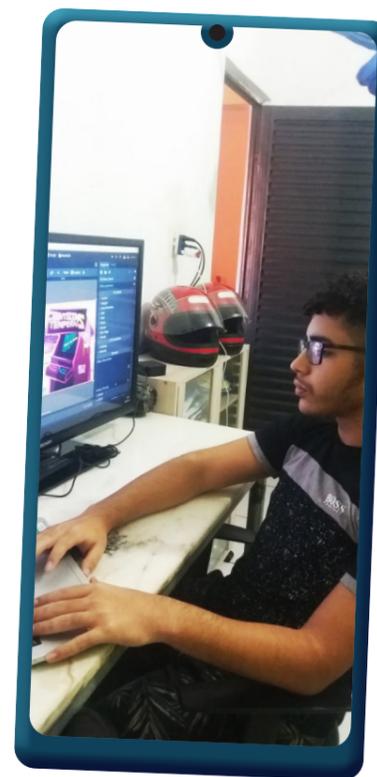**DANIELA SAITO,** teacher in charge

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Cientistas temporais
Time Scientists

Intuitive and fun, the application is a game in which the student experiences several historical periods to consolidate the contents of Chemistry, Physics, Biology and History learned in class. In the first level, which takes place during the Middle Ages, the contamination of a river by the Black Death leads to the sickening of the local population, who must, then, organize themselves to recover it. Scientists such as Darwin and Newton appear as tutors to guide the player. The app is accessible to people with color blindness.

SUSTAINABLE DEVELOPMENT GOALS

Download the app on Google Play:
https://play.google.com/store/apps/details?id=org.godotengine.cientistastemporais

" *Our main expectation was to test the game face to face, but the pandemic of the new coronavirus kept all this process from happening. We managed to get around the situation by recording videos and using an online platform. It was very useful, not only to detect flaws and review features, but also to evaluate users' sentiment. Because of all this, the technical and pedagogical mentoring throughout the Marathon was essential for us to be able to develop the project and face all the challenges."*

MATHEUS DANTAS, designer

Developers Pantaneiros
Developers from Pantanal

By using a QR Code, the students go into classes created by the teachers and, in this environment, they study, solve problems and consolidate the contents seen in class. At each challenge, they earn points and are ranked by the system. The teacher can use the time spent by each student to answer the questions and the individual scores to evaluate specific aspects. The application features a text-to-speech converter and a converter from text to the Brazilian Sign Language (Libras).
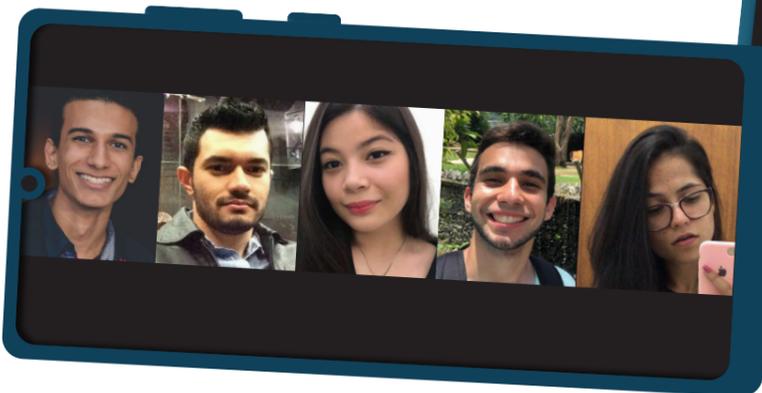
"The Marathon gave us the opportunity to develop a project that will undoubtedly help in the education of many students. One of the coolest things about the application is that it enables the expansion to other areas of knowledge provided for in the BNCC. An idea for the future is to include the possibility for teachers to be able to customize the challenges, according to their needs."

CARLOS HENRIQUE SILVA, programmer

SUSTAINABLE DEVELOPMENT GOALS

4 QUALITY EDUCATION | 6 CLEAN WATER AND SANITATION | 11 SUSTAINABLE CITIES AND COMMUNITIES
13 CLIMATE ACTION | 14 LIFE BELOW WATER | 15 LIFE ON LAND

Download the app on Google Play:
https://server-dd84f.
firebaseapp.com/

Dissecadores de Conhecimento
Knowledge Dissectors
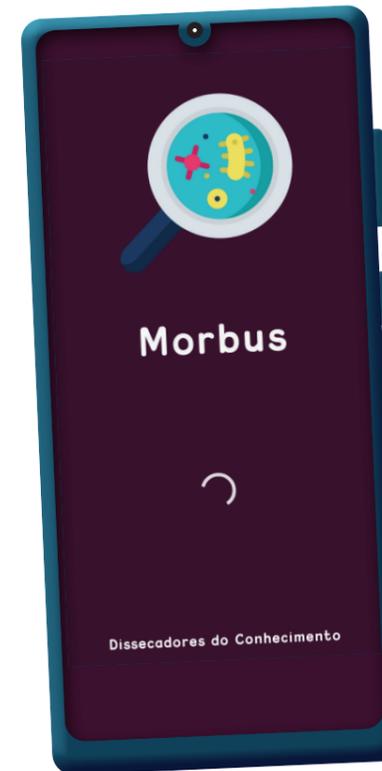
The application aims to improve the knowledge regarding the most common diseases and helps the students to retain the Biology content in a fun way. In the "study mode", the user has access to the theory in an objective and concise way: through lists of symptoms, prevention and treatment. On the other hand, in the "interactive mode", the students consolidate the contents in a participative way, interacting in real time with each other. The teachers can, for example, stimulate competitions and team games.

"We had never worked with mobile technologies before. The Marathon gave us a huge opportunity for technical learning, due to the programming language and logic, but we also learned a lot about professional attitude. We tried our best to carry out the tasks in a very professional fashion, in order to deliver everything with quality and on time, managing the time and following the schedule. It was a very enriching experience. It is very rewarding to see our idea materialized."

CARLOS EDUARDO IVIS DE OLIVEIRA, programmer

Download the app on Google Play:
https://play.google.com/store/
apps/details?id=br.com.example.
maratonasamsung

SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY | 3 GOOD HEALTH AND WELL-BEING | 4 QUALITY EDUCATION | 6 CLEAN WATER AND SANITATION | 10 REDUCED INEQUALITIES

English Talkers

While the students study and practice the grammar of the English language, they become familiar with the culture and customs of the inhabitants of English-speaking countries. The application - with its soft and intuitive design - fosters empathy, constructive communication, mutual respect and appreciation of the diversity of individuals and social groups and their particular knowledge, identities and cultures, without prejudices of any kind. The contents are divided into four countries, representing four continents: England, Australia, the United States and South Africa. The students explore the content and practice multiple-choice exercises or answer open-ended questions.

SUSTAINABLE DEVELOPMENT GOALS

Download the app on Google Play:
https://play.google.com/store/apps/
details?id=com.ifal.englishtalkers

"At the beginning of the project, we did a survey to know if our idea was valid. From 0 to 5, most students rated their English level as 0 or at most 2, which is very concerning among High School students. Regarding the quality of the teaching, the majority of the students gave a grade of 4, from 0 to 10, therefore, the Marathon gave us the opportunity to develop a tool that can fill an important gap."

MARIA EDUARDA SANTOS, programmer

Fisicar
To Do Physics

In an innovative way, the application enables the students to solve Mathematics and Physics problems by immersing themselves in the content and with futuristic technology. All the student has to do is add the proposed numerical values in the question and an augmented reality scenario will show up right in front of her/him. This way, she/he "goes inside the problem to be solved". The user can see in front of her/him, for example, the cars accelerating or slowing down on a track. It is accessible to users with color blindness.

"Our big challenge was to meet the deadlines, since we had to study and do the school assignments while developing the application. The Marathon gave us a great opportunity to learn how to coordinate several activities, to work in a team, it was very good. It also gave us a chance to show that the new technologies can improve everyone's life, especially in a context in which we will be increasingly present online."

VINICIUS HONDA, designer
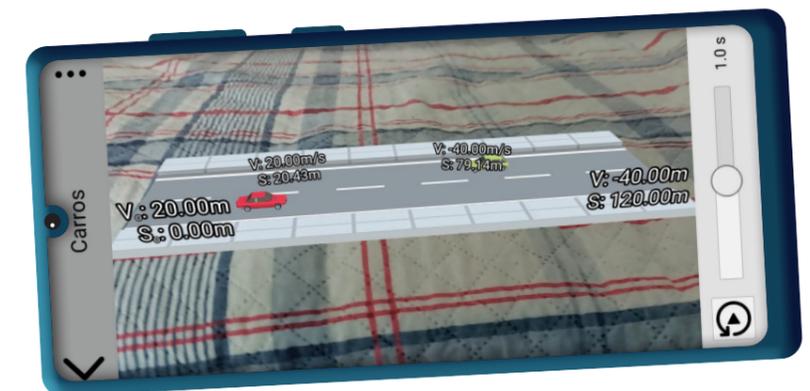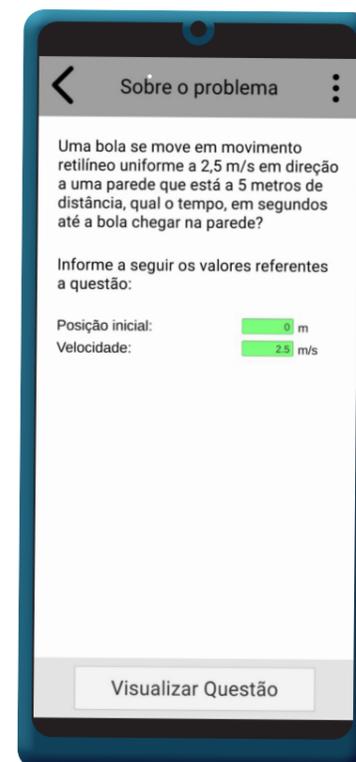
SUSTAINABLE DEVELOPMENT GOALS

Download the app on Google Play:
https://play.google.com/store/
apps/details?id=com.FisicARTeam.
FisicAR

InfarmNet

The application is a video game that introduces the students to the concepts of sustainable farming and solidarity economy and encourages a healthy lifestyle. The user raises animals, grows plants and harvests what is necessary to survive, she/he also trades with other farmers and must take care of her/his health through a balanced diet and physical activities to be successful in the game. The application - aiming to reach the largest possible number of students - works on several types of devices, from the most basic to the most modern ones. It has the Brazilian Sign Language (Libras) interpretation feature and screen reading.

SUSTAINABLE DEVELOPMENT GOALS

| 2 ZERO HUNGER | 3 GOOD HEALTH AND WELL-BEING | 11 SUSTAINABLE CITIES AND COMMUNITIES | 12 RESPONSIBLE CONSUMPTION AND PRODUCTION |

Download the app on Google Play:
https://play.google.com/store/apps/
details?id=ifarmnet.ifarmnet

" At first I thought I was not able to develop an application. But, as we progressed, I realized that it was possible. In the end, when I saw the game working and being really well evaluated by people, I became aware of how important the Marathon has been for me! It gave me great confidence in myself! It will be unforgettable because it showed me that, with willingness and work, we are all capable."

FABRÍCIA NICOMEDES, designer

Lab de Bolso
Pocket Lab

Designed to make up for the lack of physical laboratories in public schools, the application enables students to do simulations and practical experiments using their smartphones. It has guides that summarize the theoretical concepts and guide the user in carrying out practical experiments. Thus, the students have in their hands a "pocket laboratory" where he can learn about the application of some of the substances used in daily life. It has Portuguese subtitles for the people with hearing loss.

" There is a myth that technology is difficult for those with no programming experience. The Marathon has this power: to demystify this belief and to encourage young people to use new technologies. It really motivated the students as they realized that it was possible to create and develop an app. It is a very enriching process. As a teacher, it was wonderful for me to see their dedication and study, since the conception of the idea. It was a wonderful experience."

VALÉRIA CAVALCANTI,
teacher in charge

SUSTAINABLE DEVELOPMENT GOALS

| 4 QUALITY EDUCATION | 10 REDUCED INEQUALITIES |

Download the app on Google Play:
https://play.google.com/store/
apps/details?id=com.calebeof.
labdebolso

Ligados no 220
Powered on 220v

ntuitive and easy to use, the application introduces students to the concepts of sustainable development and energy sources and their environmental impacts. In "SustenCity", the player has to manage the energy generation of a city, installing and removing power plants, provided that he has done a previous socio-environmental assessment. The game encourages the students to act personally and collectively with responsibility. It has the option of activating and deactivating music and sounds, screen reading, support for color blind people and it does not use flashing lights or sudden color changes.

> "The Marathon is extremely important because it represents a project with a beginning, middle and end, with goals, objectives and deadlines. Then the students learn about team organization, schedules, task distribution and autonomy. They outperformed themselves in all aspects, even during the pandemic of the new coronavirus, which brought a new communication, deadline, and organization challenge. It is a very enriching experience for everyone".

DANIEL DALIP, teacher in charge

SUSTAINABLE DEVELOPMENT GOALS

4 QUALITY EDUCATION	7 AFFORDABLE AND CLEAN ENERGY	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION
14 LIFE BELOW WATER		

Download the app on Google Play:
https://play.google.com/store/apps/details?id=com.ligados.sustencity

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Lignem

The intention of the application is to promote the integration between several High School subjects using a fun and interactive game: the user has to assess the installation of power plants in a location according to several factors and environmental impacts. As a result, the application presents the student with the main forms of energy generation available today, their advantages and disadvantages. The application is divided into: content screens (pages with information about the topics), game screens (where the student interacts with the topics and makes decisions) and settings screens (accessibility options for color blind people and people with motor disabilities).

> "We had never worked with any specific platform for video game development, we lacked knowledge of pedagogical aspects and did not know how to make the application accessible, so it was a tremendous learning experience. The Marathon opened our eyes to the possibility of using technologies to solve everyday problems. We hope that the app will help in a quality education that is accessible to all."

ARTHUR GUERRA, designer

SUSTAINABLE DEVELOPMENT GOALS

4 QUALITY EDUCATION	7 AFFORDABLE AND CLEAN ENERGY

Download the app on Google Play:
https://play.google.com/store/apps/details?id=com.lignem

Ocaviva
Living Oca

Understanding a city as a living organism is the objective of this application that simulates a municipality as if it were a human body. The students are invited to solve problems and their attitudes influence the health of this body, making it more or less healthy. It engages and motivates students through curiosity and debates, and it reminds them that the decisions made by the individual reflect on the collective. It has screen reading and a good color contrast options.

"I already had the knowledge of creating applications, so I was able to share what I knew with other students like me. The research process on Biology and Sociology themes for the development of the project was really delightful because it enabled us to explore different perspectives to make our application as dynamic as possible and easy to understand. It was wonderful to participate in the Marathon because it allowed us to study and be creative as a team ."

GABRIELLY RODRIGUES, designer

SUSTAINABLE DEVELOPMENT GOALS

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

Download the app on Google Play:
https://play.google.com/store/apps/details?id=com.ocaviva

Os Cavaleiros que dizem Ni
The Knights who say Ni

The application is, in fact, a role-playing game (RPG) in which the player is inserted in the 1812 England, the times of the Luddites. As she/he progresses, the student receives information regarding the processes of production and circulation, and also she/he identifies, analyzes and discusses historical, geographical, political, economic, social and environmental circumstances. The app is of great assistance in the teaching of History, Geography and Sociology, and promotes the students' engagement concerning the contents. It is accessible for color blind people and has visual representation of sounds.

"The Marathon was very important because it gave us the opportunity to study and learn a lot. We had to do a lot of research on the SDGs and on the historical facts to keep the narrative true to reality. The whole process of idealization, improvement of the content and the final phase was really cool and we really liked the result. It was a really enjoyable experience".

PEDRO PAULO BARBOSA, programmer

SUSTAINABLE DEVELOPMENT GOALS

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Download the app on Google Play:
https://play.google.com/store/apps/details?id=com.CavaleirosQueDizemNi.VaporeGuerra

Os Conselheiros
The Counselors

With the application "Agora", the students can experience debates, the exercise of argumentation, defend points of view and make decisions. The users have to manage a city together by making collective decisions in a variety of situations. Each round, they must provide arguments, discuss and decide whether to approve or reject a request, and each decision affects the city. The application has a color filter for color blind people and a zoom option for people with reduced vision.

"It was not an easy application to make, so it was beautiful to see the students' commitment, both to the technical and pedagogical part, and to studying and creating the content. They organized themselves so well that the quarantine didn't get in their way at all; everyone came together to think about helping the public school. The Marathon definitely helps to transform people's lives. I am proud to say that I was part of it."

ELMARA DE SOUZA, teacher in charge

Download the app on Google Play:
https://play.google.com/store/apps/details?id=com.DefaultCompany.agora

SUSTAINABLE DEVELOPMENT GOALS

Paipujin

The intention of this application is, not only to motivate the students to play sports and make Physical Education classes more dynamic, but also to facilitate the learning of topics such as muscle tissues and other knowledge about the human body. Through the app, the Physical Education teachers can carry out specific monitoring of the performance of their students. It has a module for students and another one for teachers. It also has two accessibility features: screen reading and font size increase, for people with low visual acuity.

SUSTAINABLE DEVELOPMENT GOALS

Download the app on Google Play:
https://play.google.com/store/apps/details?id=com.labiras.paipujin
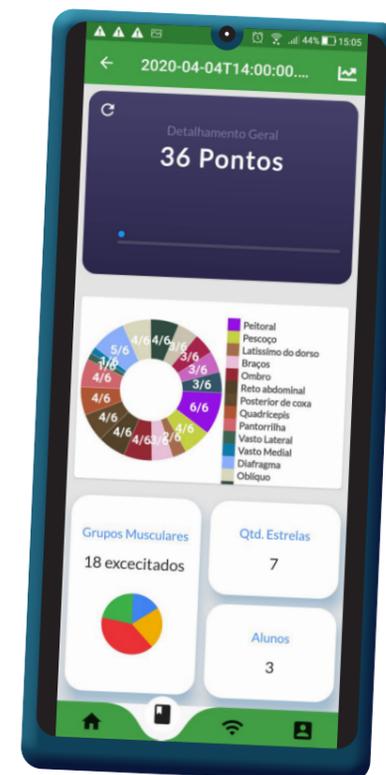
"I can only be thankful for the opportunity to have participated in the Marathon. The whole process was really enjoyable and there was a lot of learning. Young people increasingly stay indoors, so physical exercise is increasingly important. Then we hope that the application will be used by many students and many schools in the public school system."

WELLYSON SOARES, designer

Prisma
Prism

The application links the knowledge of Mathematics with the Applied Social and Human Sciences, with the help of a special tutor, the mascot Thalles, who guides the user and presents stories of personalities with hearing impairments. The intention is that the tool is, not only accessible, but also that it places the person with hearing loss in a leading position.
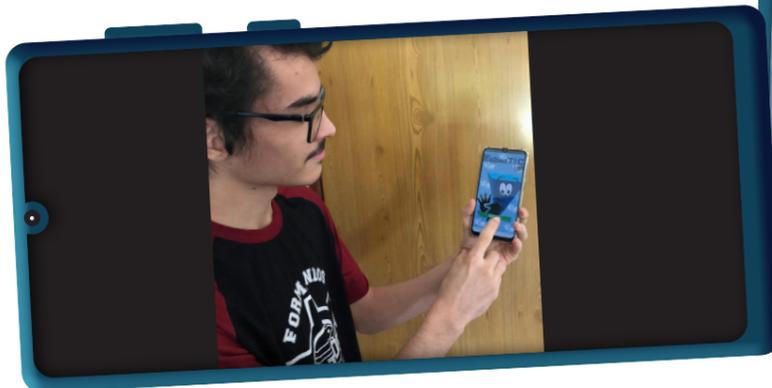
"The Marathon gave us the possibility to experience accessibility on a daily basis, throughout the process; from the conception of the idea, through its development, until the materialization of the project. It was very important to realize that we only become aware of the simple things related to accessibility when we live with people who are different from us."

VIVIANE MORETTO, teacher in charge

SUSTAINABLE DEVELOPMENT GOALS

4 QUALITY EDUCATION

10 REDUCED INEQUALITIES

Download the app on Google Play:
https://play.google.com/store/apps/details?id=com.aventuramatematica

Quântico
Quantum

In an innovative and creative way, the application proposes the learning of Physics through poetry. The gamified environment awakens the familiarity in approaching the contents using music, visual elements, a scoring system and a progressive increase in the level of difficulty with each challenge that is overcome. The app encourages the debate around scientific topics in and outside the classroom.

"I've always liked the Natural Sciences, but I didn't use to like Language, I was too narrow-minded about it. In addition to introducing me to new digital tools, the Marathon broadened my horizons because, while studying to build the project, I learned to like poetry."

MELRILENE DE SOUZA, programmer

SUSTAINABLE DEVELOPMENT GOALS

4 QUALITY EDUCATION

Download the app on Google Play:
https://play.google.com/store/apps/details?id=quantico.fisica.mais.portugues.release

Quartel Otaku
Barrack Otaku

The goal of this application is to include Chemistry in the students' daily lives, in a natural and fun way. The users are guided - with the aid of maps and GPS - to collect atoms that appear according to the following classification: common, rare, epic, legendary and synthetic. When the periodic table is accessed, it is possible to check the atoms that have already been explored. The app has friendly colors for people with autism and it also has filters for color blind people. The "debug" mode works without having to go out on the street.

SUSTAINABLE DEVELOPMENT GOALS

Download the app on Google Play:
https://play.google.com/store/apps/details?id=com.agronault.FindLabs
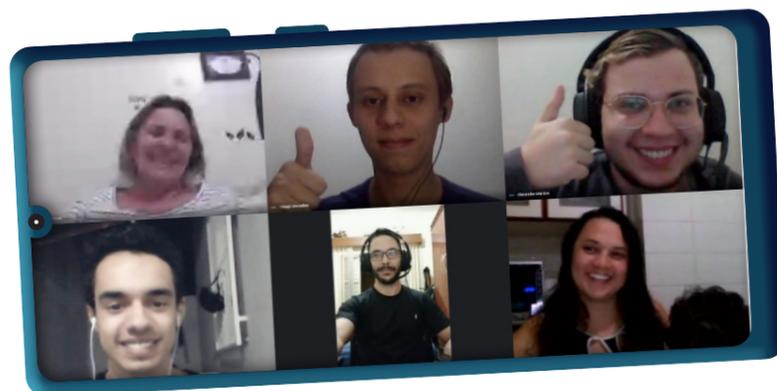
" *I had never participated in a marathon and I can surely say that it was a unique opportunity. I learned a lot, not only about Chemistry but also about programming, when I studied to develop the project. I am very thankful for the opportunity. It was a remarkable and fun experience."*

THIAGO DORNELLES,
programmer

Team Upgrade

The application seeks to facilitate the understanding of chemical formulas, the concept of hydrocarbons present in nature, and the interaction of students with teachers. The students become able to build and visualize the formulas of the main compounds, receiving information about their characteristics and properties. It works offline, facilitating the access to the students, and it has a screen reader and font size adjustment for people with visual impairments.

" *Chemistry was never really a subject that I liked, so the Marathon gave me the opportunity to understand it more easily. The process of studying to create the app was really cool and fun, and in the end, we could see that we were able to develop a creative and interactive project."*

GABRIEL FERREIRA,
programmer

SUSTAINABLE DEVELOPMENT GOALS

Download the app on Google Play:
https://play.google.com/store/apps/details?id=br.com.maratona

As you could see, the 19 applications that were developed, aligned with the National Common Curricular Base (BNCC) and with the Sustainable Development Goals (SDGs) of the United Nations, brought a great diversity of topics and approaches. The UNICEF Samsung Marathon seeks proposals that encourage collaborative work and offer creative and playful solutions to sensitive areas of society.

Projects that contribute to learning materials related to the debate on sexuality, the fostering of gender equality, prevention of diseases and Sexually Transmitted Infections (STIs) came from the States of Sergipe, Santa Catarina and Minas Gerais. The teams from the States of Alagoas, Amazonas, Paraíba and Bahia created proposals that foster the interest in subjects such as Physics, Chemistry, History, Geography, Mathematics and the English and Portuguese Languages.

In addition, the concern with digital accessibility for people with hearing and visual impairments came from the States of Mato Grosso do Sul and Paraná. The students from the State of Piauí, on the other hand, developed a project to encourage the practice of sports and those from the State of Rio de Janeiro, devised a tool to promote sustainable farming.

We need to encourage and incentive new forms of learning. It is refreshing to acknowledge the creativity, capacity and potential of these adolescents and young students. It is through them that we become aware of the importance of listening to them and engaging them in Education and in the design of proposals that contribute to actions that impact our present and future. In the current moment of society, more than ever, these applications contribute to the learning and interactivity between students and educators.

UNICEF, Samsung and their partners in the Marathon believe that the mobile technologies created and developed by these 19 teams, from the most diverse regions of the country, help guarantee the right to learn for each child and adolescent.

Thank you for sharing this journey with us!