CBG Scientific Initiation Fellowship Proposal

Arithmetic in Basic Education
Addition: meanings, representations, mental calculation and algorithms

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation
Line(s) of research:
Arithmetic in Basic Education

1 Summary

This scholarship is aimed at practising teachers with experience in Basic Education to coordinate the work of the group of students that will be working on writing the materials (writers, from now on) regarding Addition: meanings, representations, mental calculation and algorithms.

2 Objectives

1. Coordinate a group of writers;
2. Cooperate with other coordinators in order to ensure coherence between different materials;
3. Facilitate the integration between writers and other professionals involved in the project, such as designers, software developers, reviewers and researchers;
4. Work closely with the post-doc researcher to improve the quality of the materials.

3 Work Plan

3.1 Activities

1. Organize groups of study and discussion among writers;
2. Coordinate the writing process;
3. Supervise the final polishing of the material;

3.2 Schedule

Activity \Months	1 - 3	4 - 6	7 - 9	10 - 12
1	X			
2		X	X	
3				X

References

[1] MA, Liping. Knowing and teaching elementary mathematics: Teachers' understanding of fundamental mathematics in China and the United States. Routledge, 2010.

[2] VAN DE WALLE, John A. Elementary and Middle School Mathematics: Teaching Developmentally. New Jersey: Pearson, 1990.

CBG Scientific Initiation Fellowship Proposal

Arithmetic in Basic Education
Division: meanings, representations, mental calculation and algorithms

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation
Line(s) of research:
Arithmetic in Basic Education

1 Summary

This scholarship is aimed at practising teachers with experience in Basic Education to coordinate the work of the group of students that will be working on writing the materials (writers, from now on) regarding Division: meanings, representations, mental calculation and algorithms.

2 Objectives

1. Coordinate a group of writers;

2. Cooperate with other coordinators in order to ensure coherence between different materials;

3. Facilitate the integration between writers and other professionals involved in the project, such as designers, software developers, reviewers and researchers;

4. Work closely with the post-doc researcher to improve the quality of the materials.

3 Work Plan

3.1 Activities

1. Organize groups of study and discussion among writers;
2. Coordinate the writing process;
3. Supervise the final polishing of the material;

3.2 Schedule

Activity \Months	1 - 3	4 - 6	7 - 9	10 - 12
1	X			
2		X	X	
3				X

References

[1] MA, Liping. Knowing and teaching elementary mathematics: Teachers' understanding of fundamental mathematics in China and the United States. Routledge, 2010.

[2] VAN DE WALLE, John A. Elementary and Middle School Mathematics: Teaching Developmentally. New Jersey: Pearson, 1990.

CBG Scientific Initiation Fellowship Proposal

Arithmetic in Basic Education
Fractions: meanings, representations and operations

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation
Line(s) of research:
Arithmetic in Basic Education

1 Summary

This scholarship is aimed at practising teachers with experience in Basic Education to coordinate the work of the group of students that will be working on writing the materials (writers, from now on) regarding Fractions: meanings, representations and operations.

2 Objectives

1. Coordinate a group of writers;

2. Cooperate with other coordinators in order to ensure coherence between different materials;

3. Facilitate the integration between writers and other professionals involved in the project, such as designers, software developers, reviewers and researchers;

4. Work closely with the post-doc researcher to improve the quality of the materials.

3 Work Plan

3.1 Activities

1. Organize groups of study and discussion among writers;
2. Coordinate the writing process;
3. Supervise the final polishing of the material;

3.2 Schedule

Activity \Months	1 - 3	4 - 6	7 - 9	10 - 12
1	X			
2		X	X	
3				X

References

[1] MA, Liping. Knowing and teaching elementary mathematics: Teachers' understanding of fundamental mathematics in China and the United States. Routledge, 2010.

[2] VAN DE WALLE, John A. Elementary and Middle School Mathematics: Teaching Developmentally. New Jersey: Pearson, 1990.

CBG Scientific Initiation Fellowship Proposal

Arithmetic in Basic Education
Multiplication: meanings, representations, mental calculation and algorithms

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation
Line(s) of research:
Arithmetic in Basic Education

1 Summary

This scholarship is aimed at practising teachers with experience in Basic Education to coordinate the work of the group of students that will be working on writing the materials (writers, from now on) regarding Multiplication: meanings, representations, mental calculation and algorithms.

2 Objectives

1. Coordinate a group of writers;

2. Cooperate with other coordinators in order to ensure coherence between different materials;

3. Facilitate the integration between writers and other professionals involved in the project, such as designers, software developers, reviewers and researchers;

4. Work closely with the post-doc researcher to improve the quality of the materials.

3 Work Plan

3.1 Activities

1. Organize groups of study and discussion among writers;
2. Coordinate the writing process;
3. Supervise the final polishing of the material;

3.2 Schedule

Activity \Months	1 - 3	4 - 6	7 - 9	10 - 12
1	X			
2		X	X	
3				X

References

[1] MA, Liping. Knowing and teaching elementary mathematics: Teachers' understanding of fundamental mathematics in China and the United States. Routledge, 2010.

[2] VAN DE WALLE, John A. Elementary and Middle School Mathematics: Teaching Developmentally. New Jersey: Pearson, 1990.

CBG Scientific Initiation Fellowship Proposal

Arithmetic in Basic Education
Number sense and positional number system

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation
Line(s) of research:
Arithmetic in Basic Education

1 Summary

This scholarship is aimed at practising teachers with experience in Basic Education to coordinate the work of the group of students that will be working on writing the materials (writers, from now on) regarding Number sense and positional number system.

2 Objectives

1. Coordinate a group of writers;
2. Cooperate with other coordinators in order to ensure coherence between different materials;
3. Facilitate the integration between writers and other professionals involved in the project, such as designers, software developers, reviewers and researchers;
4. Work closely with the post-doc researcher to improve the quality of the materials.

3 Work Plan

3.1 Activities

1. Organize groups of study and discussion among writers;
2. Coordinate the writing process;
3. Supervise the final polishing of the material;

3.2 Schedule

Activity \Months	1 - 3	4 - 6	7 - 9	10 - 12
1	X			
2		X	X	
3				X

References

[1] MA, Liping. Knowing and teaching elementary mathematics: Teachers' understanding of fundamental mathematics in China and the United States. Routledge, 2010.

[2] VAN DE WALLE, John A. Elementary and Middle School Mathematics: Teaching Developmentally. New Jersey: Pearson, 1990.

CBG Scientific Initiation Fellowship Proposal

Arithmetic in Basic Education
Subtraction: meanings, representations, mental calculation and algorithms

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation
Line(s) of research:
Arithmetic in Basic Education

1 Summary

This scholarship is aimed at practising teachers with experience in Basic Education to coordinate the work of the group of students that will be working on writing the materials (writers, from now on) regarding Subtraction: meanings, representations, mental calculation and algorithms.

2 Objectives

1. Coordinate a group of writers;
2. Cooperate with other coordinators in order to ensure coherence between different materials;
3. Facilitate the integration between writers and other professionals involved in the project, such as designers, software developers, reviewers and researchers;
4. Work closely with the post-doc researcher to improve the quality of the materials.

3 Work Plan

3.1 Activities

1. Organize groups of study and discussion among writers;
2. Coordinate the writing process;
3. Supervise the final polishing of the material;

3.2 Schedule

Activity \Months	1 - 3	4 - 6	7 - 9	10 - 12
1	X			
2		X	X	
3				X

References

[1] MA, Liping. Knowing and teaching elementary mathematics: Teachers' understanding of fundamental mathematics in China and the United States. Routledge, 2010.

[2] VAN DE WALLE, John A. Elementary and Middle School Mathematics: Teaching Developmentally. New Jersey: Pearson, 1990.

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
Discrete and Computational Tools 1 - PART A

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

2 Objectives

The Talents School is heavily based on tutoring the young talents. This grant is intended to support a tutor. The goals of the project are:

1. Tutoring the scientific and social development of mentored students.
2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
2. Start up seminar: a week long seminar, introducing the students to the*School of Mathematical Talents*.
3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
Discrete and Computational Tools 1 - PART B

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

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1. Tutoring the scientific and social development of mentored students.
2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
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3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
Discrete and Computational Tools 1 - PART C

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

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1. Tutoring the scientific and social development of mentored students.
2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
2. Start up seminar: a week long seminar, introducing the students to the*School of Mathematical Talents*.
3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
Discrete and Computational Tools 2 - PART A

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

2 Objectives

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4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
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3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
Discrete and Computational Tools 2 - PART B

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

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2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
2. Start up seminar: a week long seminar, introducing the students to the*School of Mathematical Talents*.
3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
Discrete and Computational Tools 2 - PART C

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

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4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

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3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
General Mathematics 1 - PART A

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

2 Objectives

The Talents School is heavily based on tutoring the young talents. This grant is intended to support a tutor. The goals of the project are:

1. Tutoring the scientific and social development of mentored students.
2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
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3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
General Mathematics 1 - PART B

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

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3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
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4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
General Mathematics 1 - PART C

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

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3 Work Plan

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2. Start up seminar: a week long seminar, introducing the students to the*School of Mathematical Talents*.
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4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
General Mathematics 2 - PART A

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

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3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
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6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
General Mathematics 2 - PART B

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

2 Objectives

The Talents School is heavily based on tutoring the young talents. This grant is intended to support a tutor. The goals of the project are:

1. Tutoring the scientific and social development of mentored students.
2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
2. Start up seminar: a week long seminar, introducing the students to the*School of Mathematical Talents*.
3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
General Mathematics 2 - PART C

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

2 Objectives

The Talents School is heavily based on tutoring the young talents. This grant is intended to support a tutor. The goals of the project are:

1. Tutoring the scientific and social development of mentored students.
2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
2. Start up seminar: a week long seminar, introducing the students to the*School of Mathematical Talents*.
3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
Geometry 1- PART A

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

2 Objectives

The Talents School is heavily based on tutoring the young talents. This grant is intended to support a tutor. The goals of the project are:

1. Tutoring the scientific and social development of mentored students.
2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
2. Start up seminar: a week long seminar, introducing the students to the*School of Mathematical Talents*.
3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
Geometry 1- PART B

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

2 Objectives

The Talents School is heavily based on tutoring the young talents. This grant is intended to support a tutor. The goals of the project are:

1. Tutoring the scientific and social development of mentored students.
2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
2. Start up seminar: a week long seminar, introducing the students to the*School of Mathematical Talents*.
3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
Geometry 1- PART C

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

2 Objectives

The Talents School is heavily based on tutoring the young talents. This grant is intended to support a tutor. The goals of the project are:

1. Tutoring the scientific and social development of mentored students.
2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
2. Start up seminar: a week long seminar, introducing the students to the*School of Mathematical Talents*.
3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
Geometry 2 - PART A

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

2 Objectives

The Talents School is heavily based on tutoring the young talents. This grant is intended to support a tutor. The goals of the project are:

1. Tutoring the scientific and social development of mentored students.
2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
2. Start up seminar: a week long seminar, introducing the students to the*School of Mathematical Talents*.
3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
Geometry 1- PART B

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

2 Objectives

The Talents School is heavily based on tutoring the young talents. This grant is intended to support a tutor. The goals of the project are:

1. Tutoring the scientific and social development of mentored students.
2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
2. Start up seminar: a week long seminar, introducing the students to the*School of Mathematical Talents*.
3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
Geometry 2 - PART C

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

2 Objectives

The Talents School is heavily based on tutoring the young talents. This grant is intended to support a tutor. The goals of the project are:

1. Tutoring the scientific and social development of mentored students.
2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
2. Start up seminar: a week long seminar, introducing the students to the*School of Mathematical Talents*.
3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
Geometry 3 - PART A

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

2 Objectives

The Talents School is heavily based on tutoring the young talents. This grant is intended to support a tutor. The goals of the project are:

1. Tutoring the scientific and social development of mentored students.
2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
2. Start up seminar: a week long seminar, introducing the students to the*School of Mathematical Talents*.
3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
Geometry 3 - PART B

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

2 Objectives

The Talents School is heavily based on tutoring the young talents. This grant is intended to support a tutor. The goals of the project are:

1. Tutoring the scientific and social development of mentored students.
2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
2. Start up seminar: a week long seminar, introducing the students to the*School of Mathematical Talents*.
3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4 - 16hs) Fellowship Proposal

School of Mathematical Talents
Geometry 3 - PART C

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

The Talents School of the Principia Institute/Foundation for Theoretical Physics Institute is a 30-month educational project supporting adolescents with high abilities and interest in sciences from across Latin America. This project allows these students to manifest their capacities and develop their personal, social, and intellectual skills. Since 2020, the program has selected 30 students from the 9th grade each year. Currently, the program exclusively focuses on physics. The proposal is to start a mathematics group in 2026, focusing on interface areas of this CEPID project (algebraic and differential geometry) and various mathematics areas, interfacing with emerging research areas.

2 Objectives

The Talents School is heavily based on tutoring the young talents. This grant is intended to support a tutor. The goals of the project are:

1. Tutoring the scientific and social development of mentored students.
2. Guiding self study of very talent high school students.
3. Suggesting readings and new horizons.
4. Supervision of their work and writing habilities.

3 Work Plan

3.1 Methodology and activities

1. Team seminar with coordinators of the program and Instituto Principia's team
2. Start up seminar: a week long seminar, introducing the students to the*School of Mathematical Talents*.
3. Weekly meeting with tutored students.
4. Monthly meeting with coordination team and other tutors.
5. Summer seminar: organization and participation in the summer seminar of the school.
6. Evaluation of the project year.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
1	X					
2	X					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5						X
6						X

References

Escola de Talentos, https://www.institutoprincipia.org/escola-de-talentos

CBG Technical Training (TT-4A) Fellowship Proposal

Mathematics vocabulary in Brazilian Sign Language - Libras
Content and production organization and support- PART A

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

This scholarship is intended for a mathematics teacher,with at least a master degree, which is fluent in Libras, not necessarily being a deaf person. This is a very specialized person, which will act as co-mentor of the group of deaf students, which will record in Libras the answers to more than 1400 mathematics questions of ENEM - Brazilian *National High School Exam*. This program is a consequence and continuation of a pilot project run at Unicamp in 2023.

2 Objectives

The goals of the project are:

1. Promote social inclusion of deaf people in Brazil
2. Develop the vocabulary of mathematics in Brazilian Sign Language - Libras
3. Create the first content of a website that will be the main reference for studying mathematics in Libras.
4. Develop a community of deaf people engaged in learning mathematics

This will be achieved by recording in Libras the answer to each of the mathematics questions of ENEM. There are more than 1400 questions considering all the editions since 2009.

3 Work Plan

3.1 Methodology and activities

1. Participation in the definition of the management structure and establishing managing tools for the project
2. Start up seminar: participation in a two weeks long seminar at Unicamp, introduction to development tools and the use of the tools for recording classes. First videos productions and analysis.
3. Weekly follow up of the project and organization issues.
4. Weekly team meeting: 2 hours of weekly discussion of future subjects and analysis and correction of recorded videos.
5. Quality review of the videos.
6. Testing the pilots with deaf high school students.
7. Winter seminar: organization of a one week seminar at Unicamp, intensive work on video and teaching mathematics.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
Management structure	X	X				
Start up seminar			X			
Weekly follow up			X	X	X	X
Weekly team meeting	X	X	X	X	X	X
Quality review				X	X	X
Pilot testing				X	X	
Winter seminar						X

References

Libras + Mat, https://www.ime.unicamp.br/~libras

CBG Technical Training (TT-4A) Fellowship Proposal

Mathematics vocabulary in Brazilian Sign Language - Libras
Content and production organization and support- PART B

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

This scholarship is intended for a mathematics teacher, with at least a master degree and 4 years of experience, which is fluent in Libras, not necessarily being a deaf person. This is a very specialized person, which will act as mentor of the group of students and a math teacher of the group. The group of deaf students will record in Libras the answers to more than 1400 mathematics questions of ENEM - Brazilian National High School Exam. This program is a consequence and continuation of a pilot project run at Unicamp in 2023.

2 Objectives

The goals of the project are:

1. Promote social inclusion of deaf people in Brazil
2. Develop the vocabulary of mathematics in Brazilian Sign Language - Libras
3. Create the first content of a website that will be the main reference for studying mathematics in Libras.
4. Develop a community of deaf people engaged in learning mathematics

This will be achieved by recording in Libras the answer to each of the mathematics questions of ENEM. There are more than 1400 questions considering all the editions since 2009.

3 Work Plan

3.1 Methodology and activities

1. Weekly follow up of the project.
2. Weekly team meeting: 4 hours of weekly discussion of future subjects and analysis and correction of recorded videos
3. Quality review of the videos.
4. Testing the pilots with deaf high school students.
5. Testing the site with deaf high school students and its teachers.
6. Summer seminar: coordination of a two weeks seminar at Unicamp, teaching the needed mathematics of the upcoming year.
7. Winter seminar: coordination of a one week seminar at Unicamp, intensive work on video and teaching mathematics.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
Weekly follow up			X	X	X	X
Weekly team meeting	X	X	X	X	X	X
Quality review	X	X	X	X	X	X
Pilot testing	X	X				
Site testing			X	X		
Winter seminar	X					
Summer seminar				X		

References

Libras + Mat, https://www.ime.unicamp.br/~libras

CBG Technical Training (TT-5) Fellowship Proposal

Mathematics vocabulary in Brazilian Sign Language - Libras - PART A

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

This scholarship is intended for a mathematics teacher, with at least a master degree and 4 years of experience, which is fluent in Libras, not necessarily being a deaf person. This is a very specialized person, which will act as mentor of the group of students and a math teacher of the group. The group of deaf students will record in Libras the answers to more than 1400 mathematics questions of ENEM - Brazilian National High School Exam. This program is a consequence and continuation of a pilot project run at Unicamp in 2023.

2 Objectives

The goals of the project are:

1. Promote social inclusion of deaf people in Brazil
2. Develop the vocabulary of mathematics in Brazilian Sign Language - Libras
3. Create the first content of a website that will be the main reference for studying mathematics in Libras.
4. Develop a community of deaf people engaged in learning mathematics

This will be achieved by recording in Libras the answer to each of the mathematics questions of ENEM. There are more than 1400 questions considering all the editions since 2009.

3 Work Plan

3.1 Methodology and activities

1. Defining management structure and establishing managing tools for the project
2. Start up seminar: coordination of a two weeks long seminar at Unicamp, introduction to development tools and the use of the tools for recording classes. First videos productions and analysis.
3. Weekly follow up of the project.
4. Weekly team meeting: 4 hours of weekly discussion of future subjects and analysis and correction of recorded videos
5. Quality review of the videos.
6. Testing the pilots with deaf high school students.
7. Testing the site with deaf high school students and its teachers.
8. Summer seminar: coordination of a two weeks seminar at Unicamp, teaching the needed mathematics of the upcoming year.
9. Winter seminar: coordination of a one week seminar at Unicamp, intensive work on video and teaching mathematics.

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
Management structure	X	X				
Start up seminar			X			
Weekly follow up			X	X	X	X
Weekly team meeting	X	X	X	X	X	X
Quality review				X	X	X
Pilot testing				X	X	
Winter seminar						X

3.2 Schedule

References

Libras + Mat, https://www.ime.unicamp.br/~libras

CBG Technical Training (TT-5) Fellowship Proposal

Mathematics vocabulary in Brazilian Sign Language - Libras
PART B - Development

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

This scholarship is intended for a mathematics teacher, with at least a master degree and 4 years of experience, which is fluent in Libras, not necessarily being a deaf person. This is a very specialized person, which will act as mentor of the group of students and a math teacher of the group. The group of deaf students will record in Libras the answers to more than 1400 mathematics questions of ENEM - Brazilian National High School Exam. This program is a consequence and continuation of a pilot project run at Unicamp in 2023.

2 Objectives

The goals of the project are:

1. Promote social inclusion of deaf people in Brazil
2. Develop the vocabulary of mathematics in Brazilian Sign Language - Libras
3. Create the first content of a website that will be the main reference for studying mathematics in Libras.
4. Develop a community of deaf people engaged in learning mathematics

This will be achieved by recording in Libras the answer to each of the mathematics questions of ENEM. There are more than 1400 questions considering all the editions since 2009.

3 Work Plan

3.1 Methodology and activities

1. Weekly follow up of the project.
2. Weekly team meeting: 4 hours of weekly discussion of future subjects and analysis and correction of recorded videos
3. Quality review of the videos.
4. Testing the pilots with deaf high school students.
5. Testing the site with deaf high school students and its teachers.
6. Summer seminar: coordination of a two weeks seminar at Unicamp, teaching the needed mathematics of the upcoming year.
7. Winter seminar: coordination of a one week seminar at Unicamp, intensive work on video and teaching mathematics.

3.2 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
Weekly follow up			X	X	X	X
Weekly team meeting	X	X	X	X	X	X
Quality review	X	X	X	X	X	X
Pilot testing	X	X				
Site testing			X	X		
Winter seminar	X					
Summer seminar				X		

References

Libras + Mat, https://www.ime.unicamp.br/~libras

CBG Technical Training (TT-5) Fellowship Proposal

Mathematics vocabulary in Brazilian Sign Language - Libras
PART C - Finalization and evaluation

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation)
Line(s) of research:
Curricular Innovations, Impact, and Outreach
Mathematics Education and Teacher Training

1 Summary

This scholarship is intended for a mathematics teacher, with at least a master degree and 4 years of experience, which is fluent in Libras, not necessarily being a deaf person. This is a very specialized person, which will act as mentor of the group of students and a math teacher of the group. The group of deaf students will record in Libras the answers to more than 1400 mathematics questions of ENEM - Brazilian National High School Exam. This program is a consequence and continuation of a pilot project run at Unicamp in 2023.

2 Objectives

The goals of the project are:

1. Weekly follow up of the project.
2. Weekly team meeting: 4 hours of weekly discussion of future subjects and analysis and correction of recorded videos
3. Quality review of the videos.
4. Testing the pilots with deaf high school students.
5. Testing the site with deaf high school students and its teachers.
6. Summer seminar: coordination of a two weeks seminar at Unicamp, teaching the needed mathematics of the upcoming year.
7. Winter seminar: coordination of a one week seminar at Unicamp, intensive work on video and teaching mathematics.
8. Debugging and Improvements of the system.
9. Pedagogical manual and instructions for students and teachers (both in Portuguese and Libras).

2.1 Schedule

Activity / Months	1 -2	3 - 4	5 - 6	7 - 8	9 - 10	11 to 12
Weekly follow up	X	X	X			
Weekly team meeting	X	X	X	X	X	X
Quality review	X	X	X			
Site testing	X	X	X	X	X	X
Winter seminar	X					
Closing seminar				X		
Debugging and Improvements	X	X	X	X		
Manuals ans instructions				X	X	X

References

Libras + Mat, https://www.ime.unicamp.br/~libras

CBG Scientific Initiation Fellowship Proposal

Computing and Mathematics in Basic Education
Coordinator, part 1

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation
Line(s) of research:
Computing and Mathematics in Basic Education

1 Summary

This scholarship is aimed at practising teachers with experience with coding and technologies for teaching mathematics in Basic Education to coordinate the work of the group of students that will be working on writing the materials (writers, from now on) regarding Coding and Deterministic Games during the first year and Probability and Statistics during the second year.

2 Objectives

1. Organize, participate and contribute with the initial seminars developed within each group of writers;
2. Coordinate the groups of writers;
3. Ensure coherence in the work among different groups of writers;
4. Facilitate the integration between writers and other professionals involved in the project, such as illustrators, designers, reviewers, researchers etc.

3 Work Plan

3.1 Activities

1. Organize, participate and contribute with seminars for the writers;
2. Coordinate the work of the group of writers working on Coding and Deterministic Games;
3. Coordinate the work of the group of writers working on Probability and Statistics;
4. Final polishing of educational resources.

3.2 Schedule

Activity \Months	1 - 3	4 - 6	7 - 9	10 - 12	13 - 15	16 - 18	19 - 21	22 - 24
1	X				X			
2		X	X					
3						X	X	
4				X				X

References

[1] BARICHELLO, L. Relato de uma Experiência com o software KTurtle na simulação de problemas envolvendo probabilidade. Revista Professor de Matemática On line, v. 2, n. 01, 2014.

[2] BARICHELLO, L. Programação de computadores em Scratch por meio de jogos. Em: RAABE, A.; AVELINO, F. Z.; BLIKSTEIN, P. (Eds.). Computação na Educação Básica: Fundamentos e Experiências. Porto Alegre: Penso Editora, 2020.

[3] BARICHELLO, L.. Livro Aberto: Pensamento Computacional. 2a Ed. Rio de Janeiro: IMPA-OS. 2023.

CBG Scientific Initiation Fellowship Proposal

Computing and Mathematics in Basic Education
Coordinator, part 2

Principal Investigator: *Marcelo Firer*
Co-PI: *Leonardo Barichello*

Vertical(s): Innovation
Line(s) of research:
Computing and Mathematics in Basic Education

1 Summary

This scholarship is aimed at practising teachers with experience with coding and technologies for teaching mathematics in Basic Education to coordinate the work of the group of students that will be working on writing the materials (writers, from now on) regarding Problems to solve using technology and to cooperate with the post-doc researcher that will be observing the use of the material in real classrooms in order to incorporate eventual changes to improve the its quality.

2 Objectives

1. Organize, participate and contribute with the initial seminars developed within each group of writers;
2. Coordinate the groups of writers;
3. Ensure coherence with materials already finalized;
4. Facilitate the integration between writers and other professionals involved in the project, such as illustrators, designers, reviewers, researchers etc;
5. Work closely with the post-doc researcher to improve the quality f the materials.

3 Work Plan

3.1 Activities

1. Organize, participate and contribute with seminars for the writers;
2. Coordinate the work of the group of writers working on Problems to solve using technology;
3. Final polishing of all educational resources;
4. Incorporate improvements to the finalized materials based on feedback from use in real classrooms.

3.2 Schedule

Activity \Months	1 - 3	4 - 6	7 - 9	10 - 12	13 - 15	16 - 18	19 - 21	22 - 24
1	X							
2		X	X					
3				X	X	X		
4						X	X	X

References

[1] BARICHELLO, L. Relato de uma Experiência com o software KTurtle na simulação de problemas envolvendo probabilidade. Revista Professor de Matemática On line, v. 2, n. 01, 2014.

[2] BARICHELLO, L. Programação de computadores em Scratch por meio de jogos. Em: RAABE, A.; AVELINO, F. Z.; BLIKSTEIN, P. (Eds.). Computação na Educação Básica: Fundamentos e Experiências. Porto Alegre: Penso Editora, 2020.

[3] BARICHELLO, L.. Livro Aberto: Pensamento Computacional. 2a Ed. Rio de Janeiro: IMPA-OS. 2023.

CGB Public Education Fellowship Proposal

Integration consultancy at the Unicamp center – School

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Broadcast Center must have direct and constant contact with schools in the city and region for scheduling, organizing visits, documentation, etc. It is also necessary to have a dialogue with the university to manage demands such as formalizing the Extension Curricularization. And certainly the integration between the university and school also needs to be supervised so that the CBG actually provides the expected impact on basic education.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Manage demands related to schools in the city and region where the Diffusion Center is located, such as scheduling visits, documentation;
2) Manage demands related to the university where the Diffusion Center is located, especially those related to the Extension Curricularization;
3) Promote actions that encourage effective university-school integration.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) School visits and scheduling;

2) Provide necessary documentation for student/school visits to the Diffusion Center;

3) Monitor the demands of the university where the Dissemination Center is located to formalize the participation of undergraduate and postgraduate students, such as those related to the Extension Curricularization;

4) Promote effective university-school integration.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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Peres, A., Bertagnolli, S. C., & Okuyama, F. Y. (2021). *Fabricação digital em espaços criativos educacionais*. São Paulo: Pimenta Cultural.

Roschelle, J., Kaput, J., & Stroup, W. (2000). SimCalc: Accelerating students engagement with the mathematics of change. In M. J. Jacobsen & R. B. Kozma (Eds.), *Learning the sciences of the 21st century: Research, design, and implementing advanced technology learning environments* (pp. 47-75). Hillsdale, NJ: Erlbaum.

CGB Public Education Fellowship Proposal

Integration consultancy at the Unicamp center – University

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Broadcast Center must have direct and constant contact with schools in the city and region for scheduling, organizing visits, documentation, etc. It is also necessary to have a dialogue with the university to manage demands such as formalizing the Extension Curricularization. And certainly the integration between the university and school also needs to be supervised so that the CBG actually provides the expected impact on basic education.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Manage demands related to schools in the city and region where the Diffusion Center is located, such as scheduling visits, documentation;
2) Manage demands related to the university where the Diffusion Center is located, especially those related to the Extension Curricularization;
3) Promote actions that encourage effective university-school integration.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) School visits and scheduling;

2) Provide necessary documentation for student/school visits to the Diffusion Center;

3) Monitor the demands of the university where the Dissemination Center is located to formalize the participation of undergraduate and postgraduate students, such as those related to the Extension Curricularization;

4) Promote effective university-school integration.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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Roschelle, J., Kaput, J., & Stroup, W. (2000). SimCalc: Accelerating students engagement with the mathematics of change. In M. J. Jacobsen & R. B. Kozma (Eds.), *Learning the sciences of the 21st century: Research, design, and implementing advanced technology learning environments* (pp. 47-75). Hillsdale, NJ: Erlbaum.

CGB Public Education Fellowship Proposal

Integration consultancy at the Unicamp center – University-School

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Broadcast Center must have direct and constant contact with schools in the city and region for scheduling, organizing visits, documentation, etc. It is also necessary to have a dialogue with the university to manage demands such as formalizing the Extension Curricularization. And certainly the integration between the university and school also needs to be supervised so that the CBG actually provides the expected impact on basic education.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Manage demands related to schools in the city and region where the Diffusion Center is located, such as scheduling visits, documentation;
2) Manage demands related to the university where the Diffusion Center is located, especially those related to the Extension Curricularization;
3) Promote actions that encourage effective university-school integration.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) School visits and scheduling;

2) Provide necessary documentation for student/school visits to the Diffusion Center;

3) Monitor the demands of the university where the Dissemination Center is located to formalize the participation of undergraduate and postgraduate students, such as those related to the Extension Curricularization;

4) Promote effective university-school integration.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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Roschelle, J., Kaput, J., & Stroup, W. (2000). SimCalc: Accelerating students engagement with the mathematics of change. In M. J. Jacobsen & R. B. Kozma (Eds.), *Learning the sciences of the 21st century: Research, design, and implementing advanced technology learning environments* (pp. 47-75). Hillsdale, NJ: Erlbaum.

CGB Public Education Fellowship Proposal

Integration consultancy at the USP Center - Schools

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Broadcast Center must have direct and constant contact with schools in the city and region for scheduling, organizing visits, documentation, etc. It is also necessary to have a dialogue with the university to manage demands such as formalizing the Extension Curricularization. And certainly the integration between the university and school also needs to be supervised so that the CBG actually provides the expected impact on basic education.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Manage demands related to schools in the city and region where the Diffusion Center is located, such as scheduling visits, documentation;
2) Manage demands related to the university where the Diffusion Center is located, especially those related to the Extension Curricularization;
3) Promote actions that encourage effective university-school integration.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) School visits and scheduling;

2) Provide necessary documentation for student/school visits to the Diffusion Center;

3) Monitor the demands of the university where the Dissemination Center is located to formalize the participation of undergraduate and postgraduate students, such as those related to the Extension Curricularization;

4) Promote effective university-school integration.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Integration consultancy at the USP Center - University

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Broadcast Center must have direct and constant contact with schools in the city and region for scheduling, organizing visits, documentation, etc. It is also necessary to have a dialogue with the university to manage demands such as formalizing the Extension Curricularization. And certainly the integration between the university and school also needs to be supervised so that the CBG actually provides the expected impact on basic education.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Manage demands related to schools in the city and region where the Diffusion Center is located, such as scheduling visits, documentation;
2) Manage demands related to the university where the Diffusion Center is located, especially those related to the Extension Curricularization;
3) Promote actions that encourage effective university-school integration.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) School visits and scheduling;

2) Provide necessary documentation for student/school visits to the Diffusion Center;

3) Monitor the demands of the university where the Dissemination Center is located to formalize the participation of undergraduate and postgraduate students, such as those related to the Extension Curricularization;

4) Promote effective university-school integration.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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Lavicza, Z., Prodromou, T., Juhos, I., Koren, B., Fenyvesi, K., Hohenwarter, M., & Diego-Mantecon, J. M. (in press). The need for educational research on technology: Trends and examples. *International Journal for Technology in Mathematics Education*.

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Roschelle, J., Kaput, J., & Stroup, W. (2000). SimCalc: Accelerating students engagement with the mathematics of change. In M. J. Jacobsen & R. B. Kozma (Eds.), *Learning the sciences of the 21st century: Research, design, and implementing advanced technology learning environments* (pp. 47-75). Hillsdale, NJ: Erlbaum.

CGB Public Education Fellowship Proposal

Integration consultancy at the USP Center – University-School

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Broadcast Center must have direct and constant contact with schools in the city and region for scheduling, organizing visits, documentation, etc. It is also necessary to have a dialogue with the university to manage demands such as formalizing the Extension Curricularization. And certainly the integration between the university and school also needs to be supervised so that the CBG actually provides the expected impact on basic education.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Manage demands related to schools in the city and region where the Diffusion Center is located, such as scheduling visits, documentation;
2) Manage demands related to the university where the Diffusion Center is located, especially those related to the Extension Curricularization;
3) Promote actions that encourage effective university-school integration.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) School visits and scheduling;

2) Provide necessary documentation for student/school visits to the Diffusion Center;

3) Monitor the demands of the university where the Dissemination Center is located to formalize the participation of undergraduate and postgraduate students, such as those related to the Extension Curricularization;

4) Promote effective university-school integration.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Integration consultancy at the Unesp – São José do Rio Preto center – School

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Broadcast Center must have direct and constant contact with schools in the city and region for scheduling, organizing visits, documentation, etc. It is also necessary to have a dialogue with the university to manage demands such as formalizing the Extension Curricularization. And certainly the integration between the university and school also needs to be supervised so that the CBG actually provides the expected impact on basic education.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Manage demands related to schools in the city and region where the Diffusion Center is located, such as scheduling visits, documentation;
2) Manage demands related to the university where the Diffusion Center is located, especially those related to the Extension Curricularization;
3) Promote actions that encourage effective university-school integration.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) School visits and scheduling;

2) Provide necessary documentation for student/school visits to the Diffusion Center;

3) Monitor the demands of the university where the Dissemination Center is located to formalize the participation of undergraduate and postgraduate students, such as those related to the Extension Curricularization;

4) Promote effective university-school integration.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Integration consultancy at the Unesp – São José do Rio Preto center – University

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Broadcast Center must have direct and constant contact with schools in the city and region for scheduling, organizing visits, documentation, etc. It is also necessary to have a dialogue with the university to manage demands such as formalizing the Extension Curricularization. And certainly the integration between the university and school also needs to be supervised so that the CBG actually provides the expected impact on basic education.

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The general objective of the scholarship holder will be:

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2) Manage demands related to the university where the Diffusion Center is located, especially those related to the Extension Curricularization;
3) Promote actions that encourage effective university-school integration.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) School visits and scheduling;

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The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
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CGB Public Education Fellowship Proposal

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CGB Public Education Fellowship Proposal

Integration consultancy at the Unesp – Guaratinguetá center – School

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

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CGB Public Education Fellowship Proposal

Integration consultancy at the Unesp – Ilha Solteira center – School

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

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Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

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CGB Public Education Fellowship Proposal

Integration consultancy at the Unesp – Bauru center – School

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

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1) Manage demands related to schools in the city and region where the Diffusion Center is located, such as scheduling visits, documentation;
2) Manage demands related to the university where the Diffusion Center is located, especially those related to the Extension Curricularization;
3) Promote actions that encourage effective university-school integration.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) School visits and scheduling;

2) Provide necessary documentation for student/school visits to the Diffusion Center;

3) Monitor the demands of the university where the Dissemination Center is located to formalize the participation of undergraduate and postgraduate students, such as those related to the Extension Curricularization;

4) Promote effective university-school integration.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Integration consultancy at the Unesp – Bauru center – University-School

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Broadcast Center must have direct and constant contact with schools in the city and region for scheduling, organizing visits, documentation, etc. It is also necessary to have a dialogue with the university to manage demands such as formalizing the Extension Curricularization. And certainly the integration between the university and school also needs to be supervised so that the CBG actually provides the expected impact on basic education.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Manage demands related to schools in the city and region where the Diffusion Center is located, such as scheduling visits, documentation;
2) Manage demands related to the university where the Diffusion Center is located, especially those related to the Extension Curricularization;
3) Promote actions that encourage effective university-school integration.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) School visits and scheduling;

2) Provide necessary documentation for student/school visits to the Diffusion Center;

3) Monitor the demands of the university where the Dissemination Center is located to formalize the participation of undergraduate and postgraduate students, such as those related to the Extension Curricularization;

4) Promote effective university-school integration.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Integration consultancy at the Unesp – Presidente Prudente center – School

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Broadcast Center must have direct and constant contact with schools in the city and region for scheduling, organizing visits, documentation, etc. It is also necessary to have a dialogue with the university to manage demands such as formalizing the Extension Curricularization. And certainly the integration between the university and school also needs to be supervised so that the CBG actually provides the expected impact on basic education.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Manage demands related to schools in the city and region where the Diffusion Center is located, such as scheduling visits, documentation;
2) Manage demands related to the university where the Diffusion Center is located, especially those related to the Extension Curricularization;
3) Promote actions that encourage effective university-school integration.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) School visits and scheduling;

2) Provide necessary documentation for student/school visits to the Diffusion Center;

3) Monitor the demands of the university where the Dissemination Center is located to formalize the participation of undergraduate and postgraduate students, such as those related to the Extension Curricularization;

4) Promote effective university-school integration.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Integration consultancy at the Unesp – Presidente Prudente center – University

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Broadcast Center must have direct and constant contact with schools in the city and region for scheduling, organizing visits, documentation, etc. It is also necessary to have a dialogue with the university to manage demands such as formalizing the Extension Curricularization. And certainly the integration between the university and school also needs to be supervised so that the CBG actually provides the expected impact on basic education.

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The general objective of the scholarship holder will be:

1) Manage demands related to schools in the city and region where the Diffusion Center is located, such as scheduling visits, documentation;
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3.1 Methodology and activities

The activities are divided into:

1) School visits and scheduling;

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3) Monitor the demands of the university where the Dissemination Center is located to formalize the participation of undergraduate and postgraduate students, such as those related to the Extension Curricularization;

4) Promote effective university-school integration.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X

References

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CGB Public Education Fellowship Proposal

Integration consultancy at the Unesp – Presidente Prudente center – University-School

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Broadcast Center must have direct and constant contact with schools in the city and region for scheduling, organizing visits, documentation, etc. It is also necessary to have a dialogue with the university to manage demands such as formalizing the Extension Curricularization. And certainly the integration between the university and school also needs to be supervised so that the CBG actually provides the expected impact on basic education.

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The general objective of the scholarship holder will be:

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2) Manage demands related to the university where the Diffusion Center is located, especially those related to the Extension Curricularization;
3) Promote actions that encourage effective university-school integration.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) School visits and scheduling;

2) Provide necessary documentation for student/school visits to the Diffusion Center;

3) Monitor the demands of the university where the Dissemination Center is located to formalize the participation of undergraduate and postgraduate students, such as those related to the Extension Curricularization;

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The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
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CGB Public Education Fellowship Proposal

Integration consultancy at the Unesp – Ilha Solteira center – School

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Broadcast Center must have direct and constant contact with schools in the city and region for scheduling, organizing visits, documentation, etc. It is also necessary to have a dialogue with the university to manage demands such as formalizing the Extension Curricularization. And certainly the integration between the university and school also needs to be supervised so that the CBG actually provides the expected impact on basic education.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Manage demands related to schools in the city and region where the Diffusion Center is located, such as scheduling visits, documentation;
2) Manage demands related to the university where the Diffusion Center is located, especially those related to the Extension Curricularization;
3) Promote actions that encourage effective university-school integration.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) School visits and scheduling;

2) Provide necessary documentation for student/school visits to the Diffusion Center;

3) Monitor the demands of the university where the Dissemination Center is located to formalize the participation of undergraduate and postgraduate students, such as those related to the Extension Curricularization;

4) Promote effective university-school integration.

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The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
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3	X	X	X	X
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CGB Public Education Fellowship Proposal

Integration consultancy at the Unesp – Ilha Solteira center – University

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Broadcast Center must have direct and constant contact with schools in the city and region for scheduling, organizing visits, documentation, etc. It is also necessary to have a dialogue with the university to manage demands such as formalizing the Extension Curricularization. And certainly the integration between the university and school also needs to be supervised so that the CBG actually provides the expected impact on basic education.

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1) School visits and scheduling;

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4) Promote effective university-school integration.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
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References

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CGB Public Education Fellowship Proposal

Integration consultancy at the Unesp – Ilha Solteira center – University-School

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Broadcast Center must have direct and constant contact with schools in the city and region for scheduling, organizing visits, documentation, etc. It is also necessary to have a dialogue with the university to manage demands such as formalizing the Extension Curricularization. And certainly the integration between the university and school also needs to be supervised so that the CBG actually provides the expected impact on basic education.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Manage demands related to schools in the city and region where the Diffusion Center is located, such as scheduling visits, documentation;
2) Manage demands related to the university where the Diffusion Center is located, especially those related to the Extension Curricularization;
3) Promote actions that encourage effective university-school integration.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) School visits and scheduling;

2) Provide necessary documentation for student/school visits to the Diffusion Center;

3) Monitor the demands of the university where the Dissemination Center is located to formalize the participation of undergraduate and postgraduate students, such as those related to the Extension Curricularization;

4) Promote effective university-school integration.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Local consultancy from the USP Center - Studing

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Local consultancy from the USP Center – Implementation

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

References

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CGB Public Education Fellowship Proposal

Local consultancy from the USP Center – Development

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Local consultancy from the UNICAMP Center – Studing

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Local consultancy from the UNICAMP Center – Implementation

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Local consultancy from the UNICAMP Center – Development

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – São José do Rio Preto Center – Studing

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

References

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – São José do Rio Preto Center – Implementation

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

References

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – São José do Rio Preto Center – Development

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

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3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

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3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

References

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – Guaratinguetá – Studing

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

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4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

References

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – Guaratinguetá – Implementation

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

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1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

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The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

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3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – Guaratinguetá – Development

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – Ilha Solteira – Studing

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

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The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

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The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

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Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – Ilha Solteira – Implementation

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

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1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

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1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

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The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – Ilha Solteira – Development

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

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The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – Bauru – Studing

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – Bauru – Implementation

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

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The general objective of the scholarship holder will be:

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1	X			
2	X	X		
3		X	X	
4			X	X

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – Bauru – Development

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

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1	X			
2	X	X		
3		X	X	
4			X	X

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – Presidente Prudente – Studing

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – Presidente Prudente – Implementation

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – Presidente Prudente – Development

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – Ilha Solteira – Studing

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – Ilha Solteira – Implementation

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Local consultancy from the UNESP – Ilha Solteira – Development

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

Each Diffusion Center must have direct and constant contact with the central Diffusion Center of Rio Claro, where activities will be developed, based on creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality, and subsequently tested .

Each Center will receive a set of technological resources and it will be necessary to study them for their best use in everyday actions, especially with regard to the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be:

1) Hold periodic meetings with the team at the Rio Claro Central Diffusion Center to familiarize themselves with the technological resources for creation and prototyping using 3D printers, laser cutters and geogebra with augmented reality;

2) Study the technological resources of the Diffusion Center and train undergraduate students involved in Extension Curricularization activities at the Center.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the potential of technology in STEAM Education and Maker Culture;

2) Explore the Center's technological resources (3D printers, laser cutters and geogebra with augmented reality);

3) Hold periodic meetings and training with the team from the Rio Claro Central Broadcasting Center;

4) Train undergraduate students involved in the Extension Curricularization to use technologies.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X	X		
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Training consultancy for partner schools - planning

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI: Lucas Carato Mazzi

1 Summary

The Diffusion Centers will have to create a strict relationship with basic education in the State of São Paulo, especially in the region of cities where the nine Centers are located. To achieve this, specialized advice on this issue will be necessary in order to foster and vitalize the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be to provide the necessary support for an effective University-School partnership for the development of the actions of the CGB Diffusion Centers.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the regulations that govern Universities regarding Extension activities;

2) Contact the São Paulo State Department of Education and Education Directorates;

3) Formalize partnerships between the Broadcast Centers and schools, especially public ones, in the State of São Paulo;

4) Monitor scheduling actions, visits, necessary resources, etc. that promote the University-School relationship in the Diffusion Centers

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X			
3		X	X	
4		X	X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Training consultancy for partner schools - Implementation

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI: Lucas Carato Mazzi

1 Summary

The Diffusion Centers will have to create a strict relationship with basic education in the State of São Paulo, especially in the region of cities where the nine Centers are located. To achieve this, specialized advice on this issue will be necessary in order to foster and vitalize the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be to provide the necessary support for an effective University-School partnership for the development of the actions of the CGB Diffusion Centers.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the regulations that govern Universities regarding Extension activities;

2) Contact the São Paulo State Department of Education and Education Directorates;

3) Formalize partnerships between the Broadcast Centers and schools, especially public ones, in the State of São Paulo;

4) Monitor scheduling actions, visits, necessary resources, etc. that promote the University-School relationship in the Diffusion Centers

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X			
3		X	X	
4		X	X	X

References

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CGB Public Education Fellowship Proposal

Training consultancy for partner schools - Development

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI: Lucas Carato Mazzi

1 Summary

The Diffusion Centers will have to create a strict relationship with basic education in the State of São Paulo, especially in the region of cities where the nine Centers are located. To achieve this, specialized advice on this issue will be necessary in order to foster and vitalize the University-School relationship.

2 Objectives e problems of research

The general objective of the scholarship holder will be to provide the necessary support for an effective University-School partnership for the development of the actions of the CGB Diffusion Centers.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the regulations that govern Universities regarding Extension activities;

2) Contact the São Paulo State Department of Education and Education Directorates;

3) Formalize partnerships between the Broadcast Centers and schools, especially public ones, in the State of São Paulo;

4) Monitor scheduling actions, visits, necessary resources, etc. that promote the University-School relationship in the Diffusion Centers

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X			
2	X			
3		X	X	
4		X	X	X

References

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CGB Public Education Fellowship Proposal

Educational content consultancy - Planning

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

The central Diffusion Centers of Rio Claro will have to create a routine for preparing material that makes up the educational content to be disseminated in the other CGB Diffusion Centers to feed the development of its actions.

2 Objectives e problems of research

The general objective of the scholarship holder will be to provide the necessary support for effective planning, preparation and dissemination of educational content for the development of the actions of the CGB Diffusion Centers, in its different phases.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the materials available for creating educational content (such as 3G printers, laser cutters and geogebra);

2) Schedule periodic meetings for discussions between the team at the Rio Claro Central Broadcasting Center to prepare activities/resources;

3) Format the content created;

4) Provide pilot testing spaces for educational content, including basic education teachers (especially EP scholarship holders) and undergraduate students.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X		
2	X	X	X	
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Educational content consultancy - Implementation

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

The central Diffusion Centers of Rio Claro will have to create a routine for preparing material that makes up the educational content to be disseminated in the other CGB Diffusion Centers to feed the development of its actions.

2 Objectives e problems of research

The general objective of the scholarship holder will be to provide the necessary support for effective planning, preparation and dissemination of educational content for the development of the actions of the CGB Diffusion Centers, in its different phases.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the materials available for creating educational content (such as 3G printers, laser cutters and geogebra);

2) Schedule periodic meetings for discussions between the team at the Rio Claro Central Broadcasting Center to prepare activities/resources;

3) Format the content created;

4) Provide pilot testing spaces for educational content, including basic education teachers (especially EP scholarship holders) and undergraduate students.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X		
2	X	X	X	
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Educational content consultancy - Development

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

The central Diffusion Centers of Rio Claro will have to create a routine for preparing material that makes up the educational content to be disseminated in the other CGB Diffusion Centers to feed the development of its actions.

2 Objectives e problems of research

The general objective of the scholarship holder will be to provide the necessary support for effective planning, preparation and dissemination of educational content for the development of the actions of the CGB Diffusion Centers, in its different phases.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study the materials available for creating educational content (such as 3G printers, laser cutters and geogebra);

2) Schedule periodic meetings for discussions between the team at the Rio Claro Central Broadcasting Center to prepare activities/resources;

3) Format the content created;

4) Provide pilot testing spaces for educational content, including basic education teachers (especially EP scholarship holders) and undergraduate students.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X		
2	X	X	X	
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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Lavicza, Z., Prodromou, T., Juhos, I., Koren, B., Fenyvesi, K., Hohenwarter, M., & Diego-Mantecon, J. M. (in press). The need for educational research on technology: Trends and examples. *International Journal for Technology in Mathematics Education*.

Peres, A., Bertagnolli, S. C., & Okuyama, F. Y. (2021). *Fabricação digital em espaços criativos educacionais*. São Paulo: Pimenta Cultural.

Roschelle, J., Kaput, J., & Stroup, W. (2000). SimCalc: Accelerating students engagement with the mathematics of change. In M. J. Jacobsen & R. B. Kozma (Eds.), *Learning the sciences of the 21st century: Research, design, and implementing advanced technology learning environments* (pp. 47-75). Hillsdale, NJ: Erlbaum.

CBG Technical Training (TT-4) Fellowship Proposal

Research Support Manager

Principal Investigator: *Marcos Jardim* **Vertical(s):** Executive committee

1 Summary

The Brazilian Center for Geometry (CBG) is an innovative initiative in the field of mathematical sciences in Brazil and South America. Designed as a center of excellence, the CBG is committed to pushing the boundaries of research in several areas of differential, algebraic and applied geometry, driving innovation, and enhancing mathematical education and the diffusion of knowledge in society. Its establishment positions Brazil as a crucial contributor in the global mathematical community, reinforcing the nation's role in the advancement of mathematical sciences.

Some key positions in the CBG executive committee are expected to be fulfilled by Technical Training personnel. This is the case of the Research Support Manager, a management professional whose main expected activities are listed below.

2 Main Activities

1. Oversee day-to-day operations and ensure efficient administrative processes.
2. Coordinate activities between different departments and manage executive schedules.
3. Support the Executive Committee in strategic planning and project execution.

2.1 Schedule

Activity \Months	1 to 3	4 to 6	7 to 9	10 to 12	19 to 24
1	X	X	X	X	X
2	X	X	X	X	X
3	X	X	X	X	X

CBG Technical Training (TT-4) Fellowship Proposal

Educational Content Advisor

Principal Investigator: *Marcos Jardim* **Vertical(s):** Executive committee

1 Summary

The Brazilian Center for Geometry (CBG) is an innovative initiative in the field of mathematical sciences in Brazil and South America. Designed as a center of excellence, the CBG is committed to pushing the boundaries of research in several areas of differential, algebraic and applied geometry, driving innovation, and enhancing mathematical education and the diffusion of knowledge in society. Its establishment positions Brazil as a crucial contributor in the global mathematical community, reinforcing the nation's role in the advancement of mathematical sciences.

Some key positions in the CBG executive committee are expected to be fulfilled by Technical Training personnel. This is the case of the Educational Content Advisor, a education professional whose main expected activities are listed below.

2 Main Activities

1. Develop educational programs and materials.
2. Coordinate teacher training and educational outreach initiatives.
3. Ensure the quality and relevance of educational content.

2.1 Schedule

Activity \Months	1 to 3	4 to 6	7 to 9	10 to 12	19 to 24
1	X	X	X	X	X
2	X	X	X	X	X
3	X	X	X	X	X

CGB Public Education Fellowship Proposal

Digital platform consultancy - Planning

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

The Rio Claro Central Diffusion Centers will have to create a routine for preparing material that can feed digital platforms, which are the means of communication most accessed by the CGB public (researchers, teachers and students in basic education and higher education, etc.).

2 Objectives e problems of research

The general objective of the scholarship holder will be to provide the necessary support for effective planning of material to feed the digital platforms of the nine CGB Dissemination Centers.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Seek to know the actions developed in each Diffusion Center;

2) Schedule interviews with participants from the Diffusion Centers (such as students and teachers from basic education and higher education, members of teaching boards, among others;

3) Contact the professional team that carries out the technical activities of the applications to pass on promotional material to them;

4) Identify which materials produced can feed each type of CGB digital platform.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Digital platform consultancy - Feeding

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

The Rio Claro Central Diffusion Centers will have to create a routine for preparing material that can feed digital platforms, which are the means of communication most accessed by the CGB public (researchers, teachers and students in basic education and higher education, etc.).

2 Objectives e problems of research

The general objective of the scholarship holder will be to provide the necessary support for effective planning of material to feed the digital platforms of the nine CGB Dissemination Centers.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Seek to know the actions developed in each Diffusion Center;

2) Schedule interviews with participants from the Diffusion Centers (such as students and teachers from basic education and higher education, members of teaching boards, among others;

3) Contact the professional team that carries out the technical activities of the applications to pass on promotional material to them;

4) Identify which materials produced can feed each type of CGB digital platform.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12

1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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Conselho Nacional de Educação. (2018). *Resolução CNE/CP nº 7, de 18 de dezembro de 2018*. Disponível em: http://portal.mec.gov.br/index.php?option=com_docman&view=download&alias=101824-rcp007-18-pdf&category_slug=dezembro-2018-pdf&Itemid=30192

Lavicza, Z., Prodromou, T., Juhos, I., Koren, B., Fenyvesi, K., Hohenwarter, M., & Diego-Mantecon, J. M. (in press). The need for educational research on technology: Trends and examples. *International Journal for Technology in Mathematics Education*.

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CGB Public Education Fellowship Proposal

Digital platform consultancy - Feeding

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

The Rio Claro Central Diffusion Centers will have to create a routine for preparing material that can feed digital platforms, which are the means of communication most accessed by the CGB public (researchers, teachers and students in basic education and higher education, etc.).

2 Objectives e problems of research

The general objective of the scholarship holder will be to provide the necessary support for effective planning of material to feed the digital platforms of the nine CGB Dissemination Centers.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Seek to know the actions developed in each Diffusion Center;

2) Schedule interviews with participants from the Diffusion Centers (such as students and teachers from basic education and higher education, members of teaching boards, among others;

3) Contact the professional team that carries out the technical activities of the applications to pass on promotional material to them;

4) Identify which materials produced can feed each type of CGB digital platform.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12

1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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Roschelle, J., Kaput, J., & Stroup, W. (2000). SimCalc: Accelerating students engagement with the mathematics of change. In M. J. Jacobsen & R. B. Kozma (Eds.), *Learning the sciences of the 21st century: Research, design, and implementing advanced technology learning environments* (pp. 47-75). Hillsdale, NJ: Erlbaum.

CGB Public Education Fellowship Proposal

Content consultancy - Planning

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

The central Diffusion Centers of Rio Claro will have to create a routine for studying geometric content that can be explored with the CGB's technological resources, such as 3D printers, laser cutters and geogebra to be disseminated in the other CGB Diffusion Centers to feed the development of its actions.

2 Objectives e problems of research

The general objective of the scholarship holder will be to provide the necessary support for the effective creation of geometric content that will be the basis for the development of the actions of the CGB Diffusion Centers involving technological resources (in particular, 3D printers, laser cutters and geogebra).

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) 1) Study the materials available for creating educational content (such as 3G printers, laser cutters and geogebra);
2) 2) Schedule periodic discussion meetings between the team at the Rio Claro Central Diffusion Center to study Geometry involving technological resources;
3) 3) Format the content created;
4) 4) Provide pilot testing spaces for educational content, including basic education teachers (especially EP scholarship holders) and undergraduate students.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X		
2	X	X	X	
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Content consultancy - Study of geometry

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

The central Diffusion Centers of Rio Claro will have to create a routine for studying geometric content that can be explored with the CGB's technological resources, such as 3D printers, laser cutters and geogebra to be disseminated in the other CGB Diffusion Centers to feed the development of its actions.

2 Objectives e problems of research

The general objective of the scholarship holder will be to provide the necessary support for the effective creation of geometric content that will be the basis for the development of the actions of the CGB Diffusion Centers involving technological resources (in particular, 3D printers, laser cutters and geogebra).

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) 1) Study the materials available for creating educational content (such as 3G printers, laser cutters and geogebra);
2) 2) Schedule periodic discussion meetings between the team at the Rio Claro Central Diffusion Center to study Geometry involving technological resources;
3) 3) Format the content created;
4) 4) Provide pilot testing spaces for educational content, including basic education teachers (especially EP scholarship holders) and undergraduate students.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X		
2	X	X	X	
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Content consultancy - Study of geometry

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

The central Diffusion Centers of Rio Claro will have to create a routine for studying geometric content that can be explored with the CGB's technological resources, such as 3D printers, laser cutters and geogebra to be disseminated in the other CGB Diffusion Centers to feed the development of its actions.

2 Objectives e problems of research

The general objective of the scholarship holder will be to provide the necessary support for the effective creation of geometric content that will be the basis for the development of the actions of the CGB Diffusion Centers involving technological resources (in particular, 3D printers, laser cutters and geogebra).

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) 1) Study the materials available for creating educational content (such as 3G printers, laser cutters and geogebra);
2) 2) Schedule periodic discussion meetings between the team at the Rio Claro Central Diffusion Center to study Geometry involving technological resources;
3) 3) Format the content created;
4) 4) Provide pilot testing spaces for educational content, including basic education teachers (especially EP scholarship holders) and undergraduate students.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X		
2	X	X	X	
3		X	X	
4			X	X

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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Roschelle, J., Kaput, J., & Stroup, W. (2000). SimCalc: Accelerating students engagement with the mathematics of change. In M. J. Jacobsen & R. B. Kozma (Eds.), *Learning the sciences of the 21st century: Research, design, and implementing advanced technology learning environments* (pp. 47-75). Hillsdale, NJ: Erlbaum.

CBG Technical Training (TT-5) Fellowship Proposal

Executive Advisor

Principal Investigator: *Marcos Jardim* **Vertical(s):** Executive committee

1 Summary

The Brazilian Center for Geometry (CBG) is an innovative initiative in the field of mathematical sciences in Brazil and South America. Designed as a center of excellence, the CBG is committed to pushing the boundaries of research in several areas of differential, algebraic and applied geometry, driving innovation, and enhancing mathematical education and the diffusion of knowledge in society. Its establishment positions Brazil as a crucial contributor in the global mathematical community, reinforcing the nation's role in the advancement of mathematical sciences.

Some key positions in the CBG executive committee are expected to be fulfilled by Technical Training personnel. This is the case of the Executive Advisor, a management professional whose main expected activities are listed below.

2 Main Activities

1. Provide strategic advice to the Executive Committee.
2. Assist in decision-making and policy development.
3. Conduct research and analysis to support executive initiatives.

2.1 Schedule

Activity \Months	1 to 3	4 to 6	7 to 9	10 to 12	19 to 24
1	X	X	X	X	X
2	X	X	X	X	X
3	X	X	X	X	X

CGB Public Education Fellowship Proposal

Tool management - Planning

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

The Rio Claro Diffusion Center will have to create a center for the study and research of technological resources that will be used in the creation and prototyping of concrete and digital materials involving augmented reality, 3D printers, laser cutters, geogebra, etc.

This manager will be directly responsible for connecting the CGB dissemination actions and the developers and disseminators of geogebra, represented by partner Prof. Dr. Zsolt Lavicza from Johannes Kepler University (JKU) in Linz, Austria.

2 Objectives e problems of research

The general objective of the scholarship holder will be to deepen knowledge about technological resources (in particular, 3D printers, laser cutters and geogebra, in addition to augmented reality), creating spaces for sharing their studies and research with members of the Central Diffusion Center from Rio Claro. To achieve this, constant contact with Prof.'s team will be essential. Lavicza, from JKU.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study/research the materials available for creating educational content (such as 3G printers, laser cutters and geogebra);

2) Study/research the use of augmented reality using geobegra;

3) Schedule periodic discussion meetings between the team at the Rio Claro Central Broadcasting Center to share the potential of these technological resources;

4) Hold periodic meetings and technical visits with Prof.'s team. Lavicza.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4		X		

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Tool management – Development of study/research

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

The Rio Claro Diffusion Center will have to create a center for the study and research of technological resources that will be used in the creation and prototyping of concrete and digital materials involving augmented reality, 3D printers, laser cutters, geogebra, etc.

This manager will be directly responsible for connecting the CGB dissemination actions and the developers and disseminators of geogebra, represented by partner Prof. Dr. Zsolt Lavicza from Johannes Kepler University (JKU) in Linz, Austria.

2 Objectives e problems of research

The general objective of the scholarship holder will be to deepen knowledge about technological resources (in particular, 3D printers, laser cutters and geogebra, in addition to augmented reality), creating spaces for sharing their studies and research with members of the Central Diffusion Center from Rio Claro. To achieve this, constant contact with Prof.'s team will be essential. Lavicza, from JKU.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study/research the materials available for creating educational content (such as 3G printers, laser cutters and geogebra);

2) Study/research the use of augmented reality using geobegra;

3) Schedule periodic discussion meetings between the team at the Rio Claro Central Broadcasting Center to share the potential of these technological resources;

4) Hold periodic meetings and technical visits with Prof.'s team. Lavicza.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4		X		

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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Roschelle, J., Kaput, J., & Stroup, W. (2000). SimCalc: Accelerating students engagement with the mathematics of change. In M. J. Jacobsen & R. B. Kozma (Eds.), *Learning the sciences of the 21st century: Research, design, and implementing advanced technology learning environments* (pp. 47-75). Hillsdale, NJ: Erlbaum.

CGB Public Education Fellowship Proposal

Tool management – Development of study/research

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

The Rio Claro Diffusion Center will have to create a center for the study and research of technological resources that will be used in the creation and prototyping of concrete and digital materials involving augmented reality, 3D printers, laser cutters, geogebra, etc.

This manager will be directly responsible for connecting the CGB dissemination actions and the developers and disseminators of geogebra, represented by partner Prof. Dr. Zsolt Lavicza from Johannes Kepler University (JKU) in Linz, Austria.

2 Objectives e problems of research

The general objective of the scholarship holder will be to deepen knowledge about technological resources (in particular, 3D printers, laser cutters and geogebra, in addition to augmented reality), creating spaces for sharing their studies and research with members of the Central Diffusion Center from Rio Claro. To achieve this, constant contact with Prof.'s team will be essential. Lavicza, from JKU.

3 Work Plan

3.1 Methodology and activities

The activities are divided into:

1) Study/research the materials available for creating educational content (such as 3G printers, laser cutters and geogebra);

2) Study/research the use of augmented reality using geobegra;

3) Schedule periodic discussion meetings between the team at the Rio Claro Central Broadcasting Center to share the potential of these technological resources;

4) Hold periodic meetings and technical visits with Prof.'s team. Lavicza.

3.2 Schedule

The schedule is based considering the proposal of questions above.

Activity/Months	1 to 3	4 to 6	7 to 9	10 to 12
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4		X		

References

Bacich, L., & Holanda, L. (Orgs.). (2020). *STEAM em sala de aula: a aprendizagem baseada em projetos integrando conhecimentos na educação básica*. Porto Alegre: Penso. (biblioteca virtual)

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CGB Public Education Fellowship Proposal

Tool management – Development of study/research

Principal Investigator: Rúbia Barcelos Amaral Schio **Vertical**: Difusão

C0-PI:

1 Summary

The Rio Claro Diffusion Center will have to create a center for the study and research of technological resources that will be used in the creation and prototyping of concrete and digital materials involving augmented reality, 3D printers, laser cutters, geogebra, etc.

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