Teacher Consent Agreement

Thank you for volunteering to be part of our pilot study for Bootstrap this year! Your participation will help us improve and refine the curriculum, and help us learn the impact of functional programming on students' understanding of algebraic concepts.

Procedures for Participants

Participants will teach Bootstrap as part of their normal classroom practice this year, devoting the recommended 20-25 hours of time to the material with at least a 90min of in-class instruction per week, and with class periods lasting a minimum of 45min each.

Participants must the same lessons and techniques covered in the curriculum and PD workshops: Circles of Evaluation, Contracts, workbooks, Design Recipes, and consistent vocabulary for key terms.

Participants will also be responsible for:
1) <u>Distributing and collecting</u> opt-in forms to the legal guardians of students
2) Using the pre- and post- diagnostics that are part of the Bootstrap curriculum, de-identifying them (e.g. - replacing names with numbers) and sharing these results with the researcher.
3) *Participating in an exit interview.*
Participants are free to withdraw from the study at any time.

Potential Benefits and Risks to Students

All students will learn to program a game of their own design, but they may learn a great deal more: the choice of curriculum and pedagogy is designed explicitly to help their understanding of algebra.

While the Pre- and Post-tests may cause some anxiety for students, we do not foresee any undue strain or harm to children who participate.

Confidentiality

To protect students' privacy, participants must redact student names from the Pre-and Post-tests (replacing them with numbers so we can match them). This way, the only identifying information collected will be the parental consent forms for them to participate. *All test data will be completely anonymous.*

Compensation

All participants will receive a $50 Amazon Gift Card for submitting the teacher and parent consent forms, alongside the matched pre- and post-tests.

Signatures

The nature and purpose of this research have been satisfactorily explained to me and I agree to become a participant in the study as described above. I understand that I am free to refuse to participate or discontinue participation at any time if I so choose without penalty or loss of benefits to which I am otherwise entitled, and that the investigator will gladly answer any questions that arise during the course of the research.

_____ _____ _____
(date)   (subject's signature)   (print name)

To Contact the Researcher, write to Emmanuel Schanzer at schanzer@bootstrapworld.org.

Whom to contact about your rights in this research, for questions, concerns, suggestions, or complaints that are not being addressed by the researcher, or research-related harm: Human Research Protection Program, Office of Research Integrity, Brown University, Box 1986, 2 Stimson Street, 3rd Floor, Providence, RI 02912, or call (401) 863-3050.

Parental Permission Letter

Study Title: Algebra, Programming and Transfer
Investigator: Emmanuel Schanzer

This year, your child will learn computer programming as part of their normal math or technology class. During the programming portion of the class, s/he will design and write a videogame, as part of the Bootstrap curriculum (you can find more information at www.BootstrapWorld.org). As part of the class, each child will take a short math diagnostic at the beginning and end of the module.

Your child's teacher would like to share these scores with a researcher at Brown University who is studying the impact of the program. The scores will be anonymous, and will not include your child's name.

What is the purpose of this research?
The purpose of this research is to evaluate the program's ability to help students learn Algebra using a novel and engaging approach to computer programming. These results will help improve the curriculum, and may improve the delivery of the class to your child or other children.

Participation is voluntary
If you choose to share these scores, you may change your mind and notify the teacher at any time. Refusal to participate or stopping participation will involve no penalty. *If you elect to share these scores, please sign and return this form to the teacher.*

What happens to the information you collect?
The data will be used to measure the impact of the curriculum on the whole class. Your child's individual scores will *never* be used on their own, for any purpose. *Your child's name will never be shared with the researcher, used in any publication, or shared with anyone.*

If I have any questions, concerns or complaints about this research study, who can I talk to?
The researcher for this study is *Emmanuel Schanzer* who can be reached at:

schanzer@bootstrapworld.org
617-792-2438

Bootstrap Program Director
3575 Larkspur Dr.
Longmont, CO 80503

If you are comfortable with the teacher

Your child may with withdraw from the study at any time without penalty or loss of benefits to which you are otherwise entitled.

This research has been reviewed by the Committee on the Human Research Protection Program at Brown University. They can be reached at (401) 863-3050, or my mail at:

> Human Research Protection Program
> Office of Research Integrity
> Brown University, Box 1986
> 2 Stimson Street, 3rd Floor
> Providence, RI 02912

…for any of the following:
- If your questions, concerns, or complaints are not being answered by the research team,
- If you cannot reach the research team,
- If you want to talk to someone besides the research team, or
- If you have questions about your or your child's rights as a research participant.

Yes! I would like to opt into this study

I have read the information in this consent form, and I will allow my child's math diagnostics to be a part of the research study.

SIGNATURE
Your signature below indicates you are <u>granting</u> permission for your child to take part in this research.

_____
Printed name of child

_____
Printed name of parent/guardian

_____   _____
Signature of parent/guardian   Date