Team Professional Development Plan Course Offerings:

AR and VR Technologies &

Connecting Us All: Online Collaboration Tools for Teachers and Students

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With the growing advancement and flux of technologies involving mobile devices, interactives, the internet, social media sites, online Learning Management Systems that provide whole courses, webinars, and other venues to learn, it is critical that educators learn, experience, implement, and manage these tools to develop their school community for 21st century learning. In these Professional Development Offerings, administration, teachers, and student representatives will experience the flipped classroom approach, and address both augmented and virtual reality as well as communication and collaboration tools. They will be trained and experience a variety of technologies to successfully manage this type of learning environment while nurturing collaborative engagement and communication as facilitator and student.

FIRST TECHNOLOGY PROFESSIONAL DEVELOPMENT OFFERING:

AR and VR Technologies

Professional Development Goal:

The first technology professional development offering we will be focusing on is AR and VR technologies for teachers and students. The goal of this Professional Development is to train, utilize and implement technologies among teachers and students that foster the delivery and reinforcement of school approved curriculum content.

Alignment to ISTE Standards for Educators or Administrators:

This professional development is related to the ISTE Standards for Educators and Administrators. For the Educators Standards, this professional development will meet 2.b, 2.c., and 4.b. The standard 2.b. states educators will "advocate for equitable access to educational technology, digital content and learning opportunities to meet the diverse needs of all students" (ISTE Standards for Educators). This standard is extremely fitting because the training will

improve access to technology with the knowledge of what is out there and accessible for both educators and students providing a unique and different opportunity in learning. The standard 2.c. states educators "model for colleagues the identification, exploration, evaluation, curation and adoption of new digital resources and tools for learning" (ISTE Standards for Educators). This is a perfect standard for the professional development due to the modeling nature and adoption of new technological resources that this will provide. The standard 4.b. states educators will "collaborate and co-learn with students to discover and use new digital resources and diagnose and troubleshoot technology issues" (ISTE Standards for Educators). As these new tools are implemented, both teachers and students will be learning together and collaborating. For the Administrator Standards, this professional development will meet 2.a., 2.b., 3.a., and 3.d. The standard 2.a. states administrators will "ensure instructional innovation focused on continuous improvement of digital-age learning" (ISTE Standards for Administrators). By implementing this professional development, administrators are highlighting continuous improvement for their teachers and district. The standard 2.b. states administrators will "model and promote the frequent and effective use of technology for learning" (ISTE Standards for Administrators). This is fitting because administrators are modeling the use of technology for learning by choosing this important training for their educators. The standard 3.a. states administrators will "Allocate time, resources, and access to ensure ongoing professional growth in technology fluency and integration" (ISTE Standards for Administrators). For this standard, administrators have easily fulfilled this by seeing the potential need for professional growth. The standard 3.d. states administrators will "stay abreast of educational research and emerging trends regarding effective use of technology and encourage evaluation of new technologies for their potential to improve student learning" (ISTE Standards

for Administrators). Administrators buying into this training, realize that AR and VR technologies are emerging trends that demand their attention and provide us with opportunities for students to learn in new and exciting ways.

Target Audience:

The target audience for this professional development is building-level administrators, educators representative of core classes, creative arts, and student representatives. By selecting representatives of both the staff and students, it will be more feasible to roll out this technology allowing teachers and students to share with others.

Professional development activities:

The equipment needed for participants to be successful in this professional development is as follows: iPad (with appropriate apps downloaded and ready to use), iPhone (optional in lieu of the iPad), Wi-Fi Connection, Internet Access, VR Goggles (these will be provided by the technology department), Steam VR Software, and Printed "Target Posters" (specially designed printable documents for the AR experience).

Virtual Preparation:

To introduce and prepare the virtual preparation of the AR/VR Course Offering for educators and students will receive an email outlining the objectives and goals. This email will be sent one week prior to the Professional Development Offering date. The objectives will inform the participants of engagements that will take place. These objectives are to apply AR/VR technologies, brainstorm ideas on how to implement the AR/VR Technologies in a classroom setting, and the designing of a collaborative group mini lesson involving these technologies to share with participants for the development of ideas to foster student learning with the AR/VR

technologies. Along with the objectives, participants will view the goals of this professional development offering to provide vision and achievement targets. The goals are to develop 21st century learning, implement new and emerging technologies into the classroom, and develop a professional learning community.

Before attending the AR/VR development offering there are prerequisites that participants will need to accomplish to ensure their success. First, teachers will need to choose five student representatives to be involved from the event. This will provide the point of view and input from students on the AR/VR technologies in the course offering. Also, all attendees (teachers and selected students) will need to download the following apps to their iPads prior to attending the professional development course offering. It will be productive for all attendees to make efforts at least two days prior to the event ensuring apps are downloaded and working properly enabling ample time for trouble shooting. Next, there is a video to be viewed providing information and knowledge of the Chromville apps. Finally, participants will be required to access a few websites introducing and allowing participants to experience augmented realities.

APPS	• Aurasma https://www.aurasma.com This free app lets teachers create their own AR auras for their classrooms. The Aurasma App allows educators that possibility to create an augmented reality in their classrooms. Aurasma's platform includes a powerful drag-and-drop web studio that enables anyone to easily create, manage, and track augmented reality experiences to actively engage students. • Chromville Virtual Art • Chromville Science • Barcy by Chromville • Bottle Flip Companies
Video(s)	https://chromville.com/apps/ Chromville has science-based coloring pages, when colored, they become augmented reality. The specially designed pages that are printable onto printing paper touch on the eight multiple intelligences promoting storytelling, science, and art components.

Websites	• https://www.360cities.net 360 Cities provides exploration of a variety of locations throughout the world with a 360 degrees view. The locations can be view in imaging, but also action video. Not all locations have both options of imaging and videos, educators and students can explore the world that they live to learn about other culture, environments, and many geographical locations. • https://nearpod.com & https://nearpod.com/s/vr-free-lessons-F863 Nearpod provides a virtual reality experiences for viewer. Engaging in interactive presentations, assessment tools on a variety of classroom subject content. Topics include, math, civics, digital citizenship, explorations, quiz polls, drawing boards, and many others. • http://anatomy4d.daqri.com Anatomy 4D transports teachers, medical professionals, and students of all levels into an interactive 4D experience of human anatomy. • http://store.steampowered.com/steamvr SteamVR is a virtual reality system that provides an immersive experience for users.

Face-to-Face Session

Whole Group Introduction

As participants enter the professional development course offering location, they will be given a "special" colored sticker. These stickers will determine their group members for group assignments. Also, participants will see the objectives and goals posted for them to view. After participants have seated, the presenters will introduce themselves and their current teaching positions. To gain a sense of connectivity, each participant will also introduce themselves and current teaching positions. Student representatives will share their grade levels. Next, participants will be directed to view the break down and time-frame of the professional course offering consisting of three main sessions, whole group conclusion and a course conclusion. Each session will be timed for approximately two hours. This information will be displayed on a wall or PowerPoint presentation.

Session 1: Teacher Led Discussions

Groups will rotate to various tables containing activities to reinforce AR/VR technologies. Each group will be able to apply the technologies to each activity allowing group members to ask questions, engage in discussions, and develop ideas on the AR/VR technologies. Session 1 will have nine activities.

The group activities for this professional development are designed and chosen in order to get participants engaged and involved directly within this technology. The first activity involves the Aurasma App. In this activity, participants will create interactive word walls, label diagrams, classroom procedures, and rules. This will allow attendees to create augmented realities for their classroom. Within this activity, ideas that could be created are viewing key information, checking for answers to certain questions, or words with their definitions. Other possibilities are to show proper lab procedures, how a classroom should look at the end of the day, or how to properly care for classroom pets. The second activity will involve 360 Cities. Participants at this group will tour different locations, study physical environments, and visit virtual landmarks. They will be able to experience the study of erosion, the water cycle, habitats, ecosystems, take a "walk-through" in an art museum gallery, or observe art being created. 360 Cities allows viewers to have a 360-degree view through imagining or also action video. In the third activity will be the application involving the Chromville Activities, participants will explore a variety of concepts using three Chromville apps; Science, Barcy, and Bottle Flip. Participants will observe plant growth and the phases of frog metamorphosis. Also, the viewing the human anatomy and waterworks environment of the ocean and water cycle will be virtually seen. Participants will also be able to engage in a geography game to reveal facts about the world countries.

The next group off activities will involve immersive virtual reality experience. Participants will experience virtual reality in the following topics: human anatomy, solar system navigation, Google Earth, building with blocks, and arcade gaming. Continuing with the numbering of activities, activity four, participants will use Anatomy 4d activity. Participants will be able to view a variety of anatomical parts using special designed pages. They will observe the heart, muscle structure, intestines, and circulatory system. Anatomy 4d transports viewers into an interactive experience of human anatomy. In activity number five, participants will experience and explore the solar system in virtual reality using Steam VR. Participants will navigate through the galaxy collecting fuel, checkpoints, and exploding asteroids. Activity number six allows attendees in this group to experience Google Earth from a new perspective, allowing them to explore a variety of world locations in virtual reality. The seventh activity uses the VR system with Blocks software, participants will manipulate blocks to create and model objects in three-dimensional virtual space. Activity eight provides the opportunity for participants to experience arcade gaming in virtual reality. Using the Steam VR system, they will be immersed in Tilt Brush to create three- dimensional brushstrokes, stars, light, and variety of other art experiences. Also, virtual gaming experiences will allow participants to jump into action. Activity number nine involves the grouping of participants together based on a colored sticker to set the state for groups to begin planning a lesson collaboration involving AR and VR technologies. This gives the group the opportunity to implement the technologies they experienced into a lesson. In the final activity, number ten, groups will present their lesson to the whole group. This will allow participants to foster ideas, strategies, and knowledge of implementing technologies into a classroom setting.

Session 2: Lesson Design

During Session 2, Participants will collaborate in their groups to design a lesson involving the technologies that were experienced in Session 1 involving Augmented and Virtual Reality technologies and materials. This will allow whole groups to foster ideas, strategies, and knowledge of implementing technologies in a classroom setting. To aid participants in developing their lesson, questions will be posted at their group tables. These questions are: what is the intended grade level for their lesson, how can the lesson be adapted for younger/older students, what learning styles are considered, what assessments could be used, and what obstacles may prevent student learning? To eliminate any overlap of the same technology and associated materials being presented, each group will be assigned to a table with specific AR/VR technologies.

Session 3: Group Presentation

Sessions 3 will involve presentations of group lessons. Each group will present their lesson with key points addressing; topic and grade level, explanation how the technology is to be used in the classroom, and the sharing of strategies involving differentiation. Each group will have approximately ten minutes of presentation time with allowance for questions.

Whole Group Conclusion

Once presentations are completed, participants will convene for the whole group conclusion portion of the training. Teachers will complete a reflection assignment and set a goal to be completed by the following week of the professional development course offering. To complete this assignment, participants will have two options. They may either submit a reflection post, or they may submit a short reflection podcast through Edmodo. Prompt: "Explain what you have learned and how you plan to apply the course offering technology in your classroom within the month."

After the completion of the face-to-face session, presenters will complete a self-assessment rubric pertaining to the effectiveness of the professional development. They will take participant reflections, verbal feedback, and observations from the day into consideration.

Conclusion of Course Offering

The conclusion of the professional development offering will provide participants with resources to encourage their professional development learning. These resources will be website links, book titles with authors, and handouts. Additionally, follow-up recommendations of blogs and wikis that foster growth and implementation of new and emerging technologies.

Social Learning

Learning will continue after the face-to-face session that foster peer-to-peer collaboration and follow up using Edmodo.

Edmodo is a social media platform with a similar look as Facebook. The functionality of Edmodo will allow for the creation of group conversations, image uploads, typed posts, and connections with collaborators in this Professional Development Course Offerings with potential growth toward additional educators outside this course offering. Using Edmodo will foster support, feedback, and resources among teachers that are incorporating similar and new technologies in their classrooms.

Participants are requested to sign up for an account with Edmodo to share their use and implementation of the technologies and activities learned from this course offering. To assist participants with questions and troubleshooting issues, the presenters will provide solutions to common questions.

SECOND TECHNOLOGY PROFESSIONAL DEVELOPMENT OFFERING:

Connecting Us All: Online Collaboration Tools for Teachers and Students

Professional Development Goal:

The second professional development training focuses on communication. The goal of this professional development training is to model, teach, and encourage the adoption of collaboration and communication tools for teachers and students.

Alignment to ISTE Standards for Educators or Administrators:

There are four ISTE Standards for Educators that directly tie into this professional development training. Standard 1.a. encourages teachers to "set professional learning goals to explore and apply pedagogical approaches made possible by technology and reflect on their effectiveness" (ISTE Standards for Educators). This standard encourages teachers to explore current methods. Standard 2.c. calls for educators to "model for colleagues the identification, exploration, evaluation, curation and adoption of new digital resources and tools for learning" (ISTE Standards for Educators). Often, teachers can be the best resource for their colleagues. This training will encourage collaboration with fellow teachers. Standard 4.b. reassures teachers and students that growth can be gradual with new tools. They are to "collaborate and co-learn with students to discover and use new digital resources and diagnose and troubleshoot technology issues" (ISTE Standards for Educators). Lastly, standard 4.c. inspires teachers to "use collaborative tools to expand students' authentic, real-world learning experiences by engaging virtually with experts, teams, and students, locally and globally" (ISTE Standards for Educators). These activities provide students memorable learning experiences from reliable sources.

Target Audience:

The target audience for the second professional development offering is regular classroom and special education teachers. Although all members of a school community must communicate and collaborate, these teachers communicate most directly and frequently with

students. Maintaining current communication methods is vital for effective communication and collaboration between teachers and students.

Professional development activities

The equipment necessary for participants to be successful for this professional development training include a personal device (laptop, iPad, Chromebook, etc.), Wi-Fi (provided during face-to-face session), downloaded apps/installed software (Skype, Audacity, Garageband), Webcam (if personal device is not equipped with one already), Optional: Microphone (for sound quality), and the following list of websites with URLs for participants to reference.

Websites:

Schoology Schoology is a learning management system focused on housing and sharing information.	Register with Schoology Signup screen Video Tutorials for Schoology Help center videos with instructional videos to nearly all possible How-to questions as well as generalized learning management system questions Beginner's Guide to Schoology Blog Navigational guide to frequently used Schoology tabs
Skype Skype is a free audio/video and messaging communication tool which can be used though various devices including tablets, computers, and mobile devices.	Skype Skype homepage with links to resources and application download Full Skype Tutorial Video Beginners guide tutorial to Skype How to Set Up Skype Video Video navigating through account set up and video star
Google Hangouts Google Hangouts is a free audio/video and messaging communication tool sponsored by the Google platform.	Google Hangouts Google Hangout home screen and start up Hangouts How-To Google support link to initiating a Google Hangout as well as possible settings including adding people and video settings

Audacity Audacity is a downloadable audio and podcast editing software compatible with most operating systems.	Audacity Audacity homepage Complete Tutorial for Audacity Audacity tutorial for beginners Basics and Introduction to Audacity Introduction to the basics of Audacity such as set up and editing Editing an Existing Audio File Step-by-step guide to using Audacity
Garageband Garageband is a Macintosh editing software allowing for creating and editing of music and podcasts with instrumental presents, and voice.	Garageband for Mac About Garageband; what is it and what it can do. Garageband Guide Guide to Garageband complete with tutorials

Virtual Preparation

Prior to attending the face-to-face session, all participants must build prior knowledge of the tools that will be utilized during the training. The tools selected will benefit the participants in communication and collaboration with students.

First, teachers should Register with Schoology to create an account, if they do not already have one. This Schoology account will be used to access all course content, links, and assignments. Then, teachers will explore the learning management system by accessing Video Tutorials for Schoology and reading the Beginner's Guide to Schoology Blog. Next, each teacher will create an initial post, under 200 words, introducing himself or herself in the Schoology Blog. The prompt is as follows: "Introduce yourself (tell what grade/subject you teach). Tell how you currently communicate with and provide feedback to your students." Lastly, the training participants will explore the collaboration tools to build base knowledge.

The following links provide basic information, frequently asked questions, and specific sets of instructions for utilizing Skype, Google Hangouts, Audacity, and Garageband. Participants should view the following videos prior to the face-to-face session.

These steps to understanding Schoology and other software components will be outlined in an email, which will be sent to participants prior to the professional development session.

Skype	Skype Full Skype Tutorial Video How to Set Up Skype Video
Google Hangouts	Google Hangouts Hangouts How-To
Audacity	Audacity Complete Tutorial for Audacity Basics and Introduction to Audacity Editing an Existing Audio File
Garageband	Garageband for Mac Garageband Guide

Face-to-Face Session

This professional development offering emphasizes learning, exploring, and modeling the communication and collaboration tools. The session will include a whole group introduction, small group rotations to ensure that participants receive a more individualized learning experience, and then a whole group conclusion. This professional development opportunity will be organized and facilitated as a course through Schoology, through which all participants will interact.

Whole Group Introduction

The whole group introduction will begin the face-to-face session. Participants will be welcomed, all teachers and instructors will introduce themselves in person, and participants will be encouraged to ask questions and participate throughout the day. Because there will be varying levels of comfort with technology, the whole group will quickly review the learning management system, Schoology. The group will discuss where to find vital information, course content, and

turn in assignments. Questions from the group will be addressed so that participants of all levels feel adequately prepared to begin the face-to-face breakout sessions.

After the whole group introduction, the participants will be broken into three small groups. The small groups will rotate together through the bulk of the professional development. Small group rotations will include three mini sessions. The mini sessions are a Teacher Led Discussion (with facilitators), Individual Online Exploration, and a Collaborative Group Task. These mini sessions will allow participants to ask one another questions, get clarification when needed, and experience the collaboration and communication tools highlighted throughout the day.

Mini Session 1: Teacher Led Discussion (with facilitators)

The teachers who are grouped together will discuss the communication tools and their prior experiences. They will reflect on the tools they reviewed prior to the face-to-face session and discuss how they could be utilized in an educational setting.

During this session, emphasis is placed on learner-to-learner interactions. It is expected that teachers will communicate with one another, share experiences, and help one another find applications of the tools for education. Instructors will circulate at this time. If conversations are slow to start or even end early, the instructor will provide the following guiding questions for the small groups to discuss.

Guiding Questions:

- How can the learning management system, Schoology, be used to communicate with students?
- Of the collaboration and communication tools you explored in preparation for the face-to-face session, which did you have prior experience using?
- What did you learn about these tools?
- Brainstorm education applications of these tools.
- How could these tools be integrated into your classroom?

Additionally, during this time, instructors will provide individualized instruction for participants regarding the specific collaboration and communication tools. Instructors will demonstrate how to open and utilize the tools. More experienced teachers will be able to provide some of this instruction to their peers as well.

Mini-Session 2: Individual Online Exploration

This second session has been created to be a flexible time where participants can learn through "play." The teachers will explore each of the applications on their own. The applications that they will explore and delve into are Schoology, Skype, Google Hangout, Audacity, and/or Garageband. Participants will be provided with a list of suggested tasks to work on in this session.

Suggested Tasks:

- Schoology: Adapt an assignment (or unit, if you're ambitious) for the Schoology platform. Outline how you would present assignments, issue assignments and/or upload content. Remember to organize the assignment so that it is convenient for students to refer to during the course, should they have questions.
- Skype/Google Hangouts: Adapt or design a lesson to use in your classroom where the students would be using one of these communication tools in a meaningful, effective way as part of the lesson. (For example, Skyping with an expert in a field you are studying, or with a class from another school.)
- Audacity/Garageband: Adapt or design a lesson (or part of a lesson) that would involve your students creating a product using either of these audio editing tools.

Mini-Session 3: Collaborative Tasks

During the third session, each small group will practice using the tools that they have discussed and explored. For their first task, each small group must initiate a Google Hangout and/or Skype session with the members of the group with whom they are sectioned. If needed, the groups may revisit the following resources:

Skype	Skype Full Skype Tutorial Video How to Set Up Skype Video
Google Hangouts	Google Hangouts Hangouts How-To

For their second task, group members will work together to create a podcast using either Garageband or Audacity. Each group member must speak during the podcast. The podcast must be submitted in the assignments area in Schoology. If needed, groups may revisit the following resources:

Audacity	Audacity Complete Tutorial for Audacity Basics and Introduction to Audacity Editing an Existing Audio File
Garageband	Garageband for Mac Garageband Guide

Whole Group Conclusion

Once all three mini-sessions have ended, the group will convene for the whole group conclusion portion of the training. Teachers will complete a reflection assignment and set a goal to be completed within the next week. To complete this assignment, participants will have two options. They may either submit a reflection post, or they may submit a short reflection podcast through Schoology. Prompt: "Explain what you have learned and how you plan to apply this knowledge in your classroom within the next week."

After the completion of the face-to-face session, presenters will complete a self-assessment rubric pertaining to the effectiveness of the professional development. They will take participant reflections, verbal feedback, and observations from the day into consideration.

Social Learning

The learning will continue after the face-to-face sessions through the initial Schoology course. Participants will be required to complete one last post, due two weeks after the professional development training. Here is the prompt: "What was the goal you set for yourself? What did you accomplish? What were the successes and failures of implementation? Explain." Teachers will comment on, and provide feedback to, at least three other participants. After this post is complete, the course will remain as a "water cooler" for participants and trainers to revisit, network, ask questions and reflect whenever needed.

Professional Development Offering Conclusion

Engaging in a collaborative and cooperative effort on this professional development course offering assignment has been beneficial on many levels. We learned that professional developments are necessary to build upon experience, knowledge, and reflection to better develop our pedagogy. We also learned how to create course offerings that are well organized, meaningful, and timely. Additionally, we realized that designing professional course offerings requires a lot of work, even within a group. Despite the challenges of working with other busy professionals, we were able to create more effective and robust courses by working together. Throughout this assignment we gained invaluable input, ideas, and resources from one another. We also developed friendships.

From the initial announcement of our team members, we made efforts to contact each other. We knew that life could and would get busy and that things could happen that prevent a seamless flow of connectivity. We decided to break the course development offering into two sections. Madison and Wayne developed the AR/VR course and Karen and Nick created the collaboration and communication tools course. Both course offerings were geared toward

teachers and students with administrators in mind. Each group member added input for the introduction and conclusion pieces of this assignment. Google Docs allowed us to do this in a convenient manner. We each chose a font color to use for our contributions to the Google Doc. This allowed us to clearly see the edits and additions made by each team member. Also, Google Docs provided the opportunity to work collaboratively in real time. With our busy schedules, however, we did not have to work in real time. Our collaboration was conveniently saved through Google Docs. We made edits and changes, as individuals, when we were available to work on the project. Additionally, we set up a Diigo account. This allowed us to share various web journals on our professional course offerings. This platform allowed us to gain a variety of effective resources to help develop our courses. At our convenience, we could easily access these resources to understand the technologies involved with the course offerings while gleaning helpful ideas on how to implement the technologies in an educational setting suited for teachers and students.

To keep our team on the same page, we updated one another weekly via e-mail. The emails we sent involved assignment updates, changes, and questions. This allowed us a consistent pattern of communication that strengthened our team throughout the design of our professional development offerings.

As we worked on the course offerings, we learned many things. One thing that we gleaned from this experience was that collaboration occurs between equals. From the very beginning, we had an unspoken agreement of mutual trust with the understanding that we have the same amount at stake in the collaboration effort on this project. Knowing that we were accountable to one another motivated us to assist one another with deeper respect and vigor. Lastly, we learned through this assignment that more can be achieved by building

empathy instead of egos. We got to know one another's strengths, weaknesses, and interests. The initial introduction discussion post from this course allowed us to know each other's stories. We used this information as a jumping point to build our team's unity. This information allowed us to understand the perspectives of our team members and encouraged us to connect on our similarities while benefiting from our differences.

With any project or experience, there is a learning curve. The way we approached this assignment was as a collaborative body. There are, however, some things we could have done differently. At the start of this assignment we broke the team up into two groups. We thought this would be best since there were two course offerings. In hindsight, it may have been beneficial to assign smaller tasks within each course offering. This would allow us to be experts in the section we completed and avoid overlapping ideas or redundant wording in our final presentation. Also, we could have set up a bi-weekly video/audio conference with each other at a time that was convenient. This would have allowed us to clarify wordings, presentation format, and other questions necessary to complete this assignment as each question arose.

Throughout this assignment, our efforts were efficient and productive. Following the professional course offering guidelines, we knew what was expected of us to complete this assignment successfully. Our ability to contact one another as soon as team members were announced for this assignment was paramount to organizing a plan that ensured the successful completion of this assignment. Our willingness to be transparent fostered trust throughout this assignment. This transparency created an experience that was positively wonderful. We also were comforted to know that our team is made of professional individuals that care about the success of the team, as well as the individuals that make up the team.

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