A.5 PMP Math Narrative

The BASIS Math PMP clearly articulates the manner in which BASIS will both meet the Arizona College and Career Ready Standards (AZCCRS) for the student population at BASIS Scottsdale K-6 ensuring that students are prepared for the rigor of the BASIS Upper School curriculum and academic excellence at an internationally competitive level. BASIS has a long tradition of excellence that is grounded in exceedingly high standards for student achievement, aligned to a rigorous curriculum. When implemented with fidelity, the BASIS model produces exceptional student achievement. Our goal for BASIS Scottsdale K-6, as with all Arizona BASIS schools, is to achieve an "exceeding" measure on the Board's Academic Performance Expectations. The following narrative accompanies the attached BASIS Scottsdale K-6 PMP for Math which:

- Defines the BASIS curricular model;
- Identifies the manner in which BASIS will ensure the model continually evolves to meet the AZCCRS;
- Articulates how student proficiency will be monitored to demonstrate mastery and ensure academic readiness; and
- Describes how BASIS will provide meaningful professional development to achieve curricular implementation with fidelity to the BASIS model.

A. Baseline

Setting a Baseline

In order to best understand how to meet the needs of students entering BASIS Scottsdale K-6, BASIS will use existing data to establish a predicted baseline that estimates the current academic performance levels of the incoming student population. This baseline will be later refined to more accurately measure the progress of the actual student population by integrating individual student data obtained through use of a nationally normed instrument (aimsweb®) during the first week of school.

<u>Basis for Expected Baseline Figures</u>

BASIS Scottsdale K-6 will be located within the boundaries of the Scottsdale Unified School District. The families who choose to send their students to BASIS are those seeking the best education in the world. The success of the existing BASIS Scottsdale has shown that demand for this type of education is particularly high in the BASIS Scottsdale K-6 area. The BASIS program provides students from these families with the tools necessary to reach that goal and achieve at an internationally competitive level. All that is required from students is a willingness to work hard and to be open to new ideas. Our results clearly demonstrate the BASIS educational philosophy's effectiveness for nearly any child meeting those simple criteria. While all BASIS Charter Schools are open enrollment and have tended historically to attract families from all over the Phoenix metro region, we anticipate the majority of the students who will enroll at BASIS Scottsdale K-6 will live within the Scottsdale Unified boundaries. This assumption is informed by the interest we have measured from our current BASIS Scottsdale families and examining the geographic region in which they live. The state assessment data and neighborhood school scores provide relevant context for the likely incoming BASIS Scottsdale K-6 population. Because our school will begin in Kindergarten, we used 3rd grade math AIMS

data—the data for the youngest students available—to establish our baseline. This will allow us to ensure that our goals for each grade are aligned to exceed the baseline measure.

To establish the expected baseline, we used the math proficiency scores of the entire Scottsdale Unified District at the 3rd grade level. This resulted in a baseline of 83% (see table). The average current growth percentile for the students in the target population, using a measure of all Scottsdale Unified, is 53.

	Grade	**Math % Falls Far Below**	**Math % Approaches**	**Math % Meets**	**Math % Exceeds**	**Math % Passing**
Scottsdale Unified District	3	5	12	39	44	83

To gain an accurate picture of all students' present levels of performance, BASIS uses a nationally normed test instrument called aimsweb®. This instrument allows the school to determine where students are in math when they arrive at BASIS, how their performance compares on a national scale, and monitor student progress over the course of a year. The national norms for each grade level—preloaded into aimsweb®— serve as the actual foundational measure for progress of students entering grades K-3.

As evidenced in Strategy III, BASIS has developed a plan for monitoring and documenting student proficiency in a manner that will demonstrate mastery at each grade level prior to grade 3, when they will take the Arizona State Assessment aligned to the Arizona College and Career Ready Standards.

B. Process for Conducting and Analyzing Data on Effectiveness of Action Steps in PMP

Strategy I: Provide and implement a curriculum that improves student achievement

BASIS Curriculum Development Process

1. **Subject Advisors**, who are experienced BASIS teachers with expertise in a particular subject, develop a BASIS Bare Bones syllabus, which is utilized by every class in that grade and subject. To ensure maximum effectiveness, creating the syllabus involves analysis of prior year pre-comprehensive and comprehensive exam results (for 6th grade only) and all standardized test results, including PARCC/state assessment results that follow Arizona's College and Career Ready Standards. Teacher input is then incorporated to ensure that the proposal makes sense both pedagogically and with regard to content.

2. The **Director, Intellectual Capital** at BASIS.ed oversees the finalization of Bare Bones syllabi for each course to ensure alignment with Arizona's College and Career Ready Standards.

3. **Teachers** of that subject, utilizing our BASISedLink interactive database, provide the details, and develop their classroom specific syllabus.

4. The **Intellectual Capital Team** at BASIS.ed and the **Head of School** review each teacher's final syllabus to determine appropriate sequencing, pacing, and assessment.

5. The **Head of School and Director, Student Affairs** at the school monitor implementation, providing constructive feedback and guidance to teachers throughout the year

6. After AIMS (or other state assessment) results are received, the **Intellectual Capital Team** at BASIS.ed **and Subject Advisors** review school-level data and make any needed adjustments to the core curriculum for the next year.

From the earliest days of BASIS's operation, math has formed an integral part of the school's curriculum. BASIS considers knowledge of, and facility with, mathematics to be essential for success in the modern world. As such, all BASIS Upper School graduates are required to take calculus—which most of them end up enjoying—and many BASIS students continue on to college-level electives such as vector calculus, linear algebra, and game theory in 12th grade, taught by our expert teachers. One of the key goals of BASIS Scottsdale K-6 is to prepare students thoroughly and completely for this high level of achievement in mathematics. A clear

measure of this will be that all students advancing through the BASIS K-6 program (by operational year 4) are prepared for pre-algebra or Algebra I by 6th grade.

BASIS uses the Saxon Math curriculum exclusively in its math program, which has yielded extraordinarily high rates of student success in the highest levels of math. The Saxon Math curriculum is defined by two key characteristics: 1) lessons that teach small, easily digestible mathematical concepts; and 2) consistent review of concepts learned in previous lessons. The former makes even complex math topics accessible to students by gradually building up to them, and the latter ensures that students both retain and feel comfortable with computation and with applying key concepts.

Consistent with the BASIS Course Sequence, BASIS Scottsdale K-6 will utilize a different Saxon Math curriculum for each grade level served:

Saxon Math Textbooks Used at BASIS Scottsdale K-6

Grade	Textbook
K	Saxon Math 1
1	Saxon Math 2
2	Saxon Math 3
3	Saxon Intermediate 4
4	Saxon Course 1
5	Saxon Math 7/6 or 8/7
6	Algebra 1/2 or Math 8/7[1]

In keeping with BASIS's educational philosophy, students will only advance to the next level of Saxon Math when they demonstrate mastery of the topics taught at their current level. Students who have mastered these topics early will be encouraged to move on to higher levels of math. This has led to some BASIS students taking Algebra 2, for example, as early as 6th grade. The Saxon math curriculum is aligned to the Arizona College and Career Ready Standards. The BASIS implementation of the Saxon curriculum allows us to start students at their appropriate level; students advance with mastery.

By employing the LET/SET model together with the Saxon program in each class in grades K-4, students who are struggling with the curriculum are quickly identified and receive specialized instruction to keep them on track. Weekly quizzes are graded by the LETs during the class period in which they are taken. At that point, the LET is able to immediately identify struggling students and target their progress with individualized instruction and strategies. Any student

[1] It is possible that depending on the maturity of the full campus and a student's academic readiness, they will enter 6th grade in Algebra I

who receives below an 80 percent on any written formative assessment is targeted by the LET, who will reteach the individual student until they master the concept. If an entire class is not mastering a concept, the LET/SET team adjusts the pace of the lessons to ensure students achieve mastery before moving on in the course work.

As a new school member of the BASIS network of charter schools in Arizona, BASIS Scottsdale K-6 will benefit from the institutional knowledge and experience of the Charter Holder and the Education Management Organization. This network community of highly effective and experienced staff will support the BASIS Scottsdale K-6 as they create individualized benchmarks and learning objectives for the new school.

The Intellectual Capital Team (ICT) together with the HOS perform syllabi audits. These staff members consider several internally and externally generated questions through the syllabi audit process. Syllabi are created so that the following questions must be answered affirmatively:

External

1) Does the content cover the AZCCRS? All of the AZCCRS must be covered at or before grade level.

2) Has the course covered AZ state testing requirements before those test dates? Teachers must account for the state tests and cover all necessary material.

3) Does the course cover material necessary prepare students for AP courses? Students are given the opportunity to master material necessary to be successful on rigorous external exams. Vertical connections throughout the program are necessary to achieve this.

Internal

1) Is the content sequenced logically? There must be a clear and logical progression from one content area to the next so that each class is focused and has a meaningful end goal.

2) Does the timeline correspond with students' subject knowledge? Keeping in mind that the ultimate goal is to help every student succeed, each syllabus must provide a manageable timeline for students according to their abilities.

3) Does the syllabus cover enough material? Due to the accelerated nature of the program, it is essential that each class cover enough material to prepare students for the next year.

Strategy II: Monitor and Integrate AZCCRS into high quality BASIS instruction

At the core of the BASIS model is the fundamental belief that all students can achieve at the highest levels and that excellent teachers matter. It is through the emphasis on these two tenets that BASIS has developed our rich curriculum that prepares students for the highest levels of learning as they advance towards the Upper School. This curriculum ensures that students master the Arizona College and Career Ready Standards, which are central to the overall performance of the school. Even before a BASIS teacher enters the classroom, their passion for the subject and instructional methods are assessed by experienced school managers,

subject expert teachers and BASIS students themselves. BASIS has developed a strong plan to support instructional practice that allows our expert teachers the autonomy they need to maximize student achievement while ensuring that the AZCCRS are taught consistent with the BASIS Curriculum.

The central BASIS Intellectual Capital Team (ICT) is responsible for ensuring that the AZCCRS are integrated into every facet of the core curriculum. The ICT is led by a former BASIS Head of School who has extensive experience in curriculum development and deep understanding of the Arizona standards. As teachers build their syllabi, they utilize BASISedLink – a unique and proprietary online system that allows them to develop their course using required topics (those aligned to the standards) and "teacher topics" which supplement the required material. As noted in Strategy I, the ICT reviews these syllabi prior to the start of school to ensure they incorporate all requirements.

Because the Saxon Math program is fully aligned with the AZCCRS, greater emphasis is placed on instructional monitoring and support than on curricular alignment. Teachers are observed on a regular basis by their Subject Advisor from the Specialized Support Services Team (described in Strategy IV). These master educators are able to quickly identify areas for instructional improvement and are empowered to work with teachers to help them improve their practice. As the school year progresses, teachers must fill out completion reports online to show administrators that they have covered all required topics.

BASIS has achieved international academic success in large part because of the autonomy that is afforded the expert faculty. By treating teachers like professionals, BASIS allows the experts to best engage their students. Teachers are required to plan their lessons and develop materials necessary for instruction. Each teacher adopts his/her own lesson plan system: planning period (day, week, or month), format (handwritten notes, standardized forms, handouts given to students), and forms of revisions (weekly, at the end of grading period, after Pre-Comprehensive and Comprehensive Exams). Teachers are not required to submit lesson plans, but must be ready to demonstrate their lesson plan system to the HOS or any person authorized by the HOS.

To deliver lessons effectively, teachers master the set of tools necessary for utilizing time in the classroom efficiently and identify how to bring students to their highest possible levels of achievement. Teachers need to select the tools that best match their own skills and teaching style, that correspond with the nature of their subject, and that best suit the students in each class. BASIS promotes several specific tools, presented to teachers during the BASIS Teacher Institute training, but otherwise teachers have the freedom to select the methods they believe best fit the above criteria. Teachers are required to familiarize themselves with the 49 techniques published in the book *Teach Like a Champion* by Doug Lemov ("Lemov"). Teachers are responsible for learning all terms in Lemov to make communication during peer and management evaluation processes clear and precise.

The BASIS staffing model is specifically designed to drive consistency in implementation of high quality instruction that incorporates exceeding the standards for any grade and subject. The implementation of the successful BASIS staffing model includes significant informal classroom observation. As described in greater detail in Strategy IV, ongoing monitoring and support at multiple levels is built into the overall school program and design.

Strategy III: Monitor and document student proficiency

For math, homework is given nightly. Every day, students discuss which problems they had trouble with the night before and then work with other students to solve those problems on the board. Teachers also regularly assess comprehension throughout each lesson through the use of hand-held student white boards. The results of all of these techniques allow teachers to understand which students require additional support and whether the class as a whole understands concepts.

Testing is done on a weekly basis with the intent of allowing students to find out where they are struggling to understand and allowing teachers to determine what has been taught well and what has not. There are many informal assessments as well, such as whole group call back, white-board review, cold calling students, and etcetera.

Available year-to-date data from BASIS Tucson shows that the majority of students identified as struggling at the first benchmark made significant progress in response to interventions and were no longer struggling by the second benchmark. For example, some of the early Math Computation data show that in grades where Response to Intervention was implemented from the start of the school year (grades 2-4), nearly two thirds of all students moved out of the intensive struggling group in the first trimester. Consistent with the BASIS 5-12 model, BASIS Scottsdale K-6 will constantly evaluate the K-6 program strengths and weakness, modifying the program to ensure that all students are engaged and excited to learn.

The BASIS middle school model has proven itself to be able to bring almost any child, regardless of prior education and most special needs, up to the level required of every BASIS student, primarily through intensive (free) academic support by our teachers. In 2013, our lowest-scoring 5th grade student in a new school (with 0 correct answers on the 5th grade diagnostic) was able to improve exponentially, earning a passing score for grading period 2 in Saxon Math 8/7, a curriculum designed for 7th and 8th grade students. This student had a 100% in the middle of grading period 4, with an overall GPA for all classes at 91%. We are certain that the extra work faculty have put in to fill skill gaps for this student have made all the difference in her growth in mathematics and other coursework. Adding the primary grades (K-4) to the BASIS curriculum will only further enhance the learning experience for our students and better prepare them for the BASIS 5-12 program.

Strategy IV: Professional development to support effective implementation of the curriculum

As noted in Strategy III, excellent teachers are at the core of our successful educational model. While BASIS makes teacher recruitment for new schools top priority throughout the year leading up to a school's opening, teachers receive ongoing support and guidance throughout the year to ensure all students are receiving quality instruction that meets the AZCCRS and the rigorous BASIS curriculum.

July - New Teacher Training Institute

Each summer, all new BASIS faculty attend a 1-2 week training institute where they are introduced to the BASIS curriculum, develop their syllabi with the support of experienced faculty, and meet with their subject area teams from their school and across the network. Subject area groups have deep dive sessions where they review the state standards and

understand how these are integrated into the BASIS curriculum as teachers build their course syllabi. It is through this Institute that new teachers also learn about the many teaching supports and resources the BASIS network will offer them throughout the year and how to access these.

All teachers are required to read Doug Lemov's text *Teach Like a Champion* prior to attending the Institute. This text allows BASIS teacher to engage in dialogue and training using a common vocabulary. The training offers instruction on classroom management, lesson plan design, psychology, and subject-specific pointers.

August - On-site Teacher Training – During the two weeks immediately preceding the start of school, all teachers report for on-site training.

Weekly – Math Subject Area/Grade Level Team Meetings – Once a week, teachers get together with their subject matter cohort and/or their grade level cohort to review student progress, identify areas for improvement, and align instruction. These meetings are particularly meaningful in grades 1-4, where students are participating in the interdisciplinary Connections courses.

Ongoing - Specialized Support Services Team (SSST) – The SSST is a central team of Master Educators in each subject who travel around to all BASIS schools to support effective instruction. The team provides formal and informal observation, written and oral feedback, directed guidance, mentoring, and shares best practices.

Ongoing - Subject Area Advisors (SADs) – Most BASIS schools have one SAD in each subject and if not, they are paired with a regionally accessible SAD. These subject experts are able to provide deep content support for teachers and are also in the classroom teaching on a day-to-day basis, so they have direct daily experience with the issues teachers are facing.

Ongoing – Director of Student Affairs – The Director of Student Affairs oversees curriculum implementation at the school. They serve as the primary liaison between campus faculty and the Central Curriculum Division. This position reports to the Head of School (HOS) and is directly responsible for the day-to-day implementation of the BASIS Curriculum and student progress. They will schedule one-on-one meetings with teachers who are identified as struggling through classroom observation and review of student data (formative assessments, mid-term reports, etc.).

Mid-Year/End of Year Evaluations – Head of School (HOS) – A minimum of two times per year, teachers will receive an evaluation from their Head of School. These evaluations are based on classroom observation and student academic performance. The Head of School is ultimately responsible for the academic program of the school and as such monitors the progress of all teachers. In addition to the evaluation process, they utilize the BASISedLink tool to monitor whether teachers have covered and/or are on track to cover all topics required for a course. As described in Strategy II, course topics align to the BASIS Curriculum, which maps to the AZCCRS.

In addition to the program of professional development described above, math teachers receive specialized training and support on effective implementation of the Saxon Math program. BASIS holds its own Saxon Math teacher training camp just prior to regular teacher training. Math

teachers are also sent around the BASIS system to observe the veteran math champions—those who have produced consistently high results year over year.

C. Data Management and Use

BASIS routinely reviews data from every sector of school performance and management to identify areas for improvement that will ultimately produce the best results for students. Each Strategy above is geared towards ultimately meeting the academic performance goals of BASIS Scottsdale K-6. BASIS uses data to drill down to the individual student level on performance, which informs any areas of weakness in the instructional or curricular model. Because of the frequency of this data analysis, BASIS Scottsdale K-6 will be able to adjust and adapt in real time to ensure that students are prepared for success not only within the BASIS curriculum, but also on all Arizona State Assessments.

For example, all of the assessments discussed in Strategy III, from homework to weekly quizzes, are tracked for each student down to the individual topic level. This rich data set allows teachers to identify which students are struggling (or areas where large portions of the class may be struggling) and to direct additional resources to those struggling students. The teacher may also take note of the challenge encountered and decide to change her or his lesson plan for that topic for the following year.

The use of data to drive student academic performance is a philosophy that is shared among BASIS educators and BASIS students and parents alike. Once students reach grade 5, progress reports include a percentage reflecting how the student is performing within the group and grade level. When setting individual student goals, teacher, parents, and the students themselves use this information to identify individual measurable goals. This is a very powerful tool for the teacher as they work with students throughout the year.