A.3 Program of Instruction

AZACS will deliver a program of instruction of the highest quality while remaining individualized to the unique needs of each learner. In addition to providing instruction in the academic core content areas of Math, Reading, Science, Writing, Spelling, Social Studies, AZACS believes that every child with autism requires intensive, language-based interventions to promote communication and to increase access to academic curriculum. AZACS will base instruction on the principles of Applied Behavior Analysis (ABA) and Analysis of Verbal Behavior (AVB), which falls under the umbrella of ABA but is more focused on verbal communication. Research indicates that Applied Behavior Analysis is one of the most empirically supported and effective methods for the treatment and education of individuals with autism. Behavior Analysis is the science of behavior. Applied behavior analysis (ABA) is the process of systematically applying interventions based upon the principles of learning theory to improve socially significant behaviors to a meaningful degree (Baer, Wolf & Risley, 1968/1987; Sulzer-Azaroff & Mayer, 1991).

Specifically, ABA refers to a systematic approach to the assessment and evaluation of, and the application of interventions that alter behavior. ABA is an objective discipline focused on the reliable measurement and objective evaluation of observable behavior. Programs based upon ABA methodologies are grounded in the well -established principles of learning and operant conditioning, as influenced by the works of researchers such as Fred Keller and B.F. Skinner. The use of single case experimental design to evaluate the effectiveness of individualized interventions is an essential component of ABA programs and makes these programs completely data driven and results oriented.

The Analysis of Verbal Behavior (AVB) is a behavioral explanation for how language is learned and how it can be taught to those who do not adequately develop the use of language in their natural environment, which is the case for most children with autism. Skinner asserted the premise that Verbal Behavior - behavior under the control of consequences mediated by other people – was best understood in a functional analysis. This functional analysis was a direct product of his basic research using the three-term contingency (discriminative stimulus, response, reinforcement) but also included new terms such as mand, tact, textual, intraverbal, echoic and discussed other factors that would control verbal behavior. Skinner's ideas in psychology exist in what is now known as The Experimental Analysis of Behavior. Skinner's theories in Verbal Behavior are being re-explored in the field of autism and in peer-reviewed journals devoted exclusively to the topic of understanding Verbal Behavior. Using Skinner's functional analysis of verbal behavior as a basis for treating autistic children significant reproducible results have been obtained.

AZACS will look to this research on best practices in the field of autism and use Skinner's verbal operants as the framework for how language, communication and social skills will be taught. This skill set is lacking in children with autism and is a necessary precursor for academic learning in the content areas. As part of our commitment to providing high-quality, individualized educational curricula for all students, AZACS will utilize two language-based assessments- *The Verbal Behavior Milestones Assessment and Placement Program (The VB-MAPP),* and *The Assessment of Basic Language and Learning Skills - Revised (ABLLS®-R)*- to guide the development of individualized educational goals and objectives.

The VB-MAPP is a criterion-referenced assessment tool, curriculum guide, and skill tracking system that is designed for children with autism, and other individuals who demonstrate language delays. The VB-MAPP is based on B.F. Skinner's (1957) analysis of verbal behavior, established developmental milestones, and research from the field of behavior analysis. There are five components of the VB-MAPP, and collectively they provide a baseline level of performance, a direction for intervention, a system for tracking skill acquisition, a tool for outcome measures and other language research projects, and a framework for curriculum planning. Each of the skills in the VB-MAPP is not only measurable and developmentally balanced, but they are balanced across the verbal operants and other related skills. For example, many aspects of an intraverbal repertoire are based on an existing tact and listener repertoire. The VB-MAPP balances the curriculum in an attempt to avoid the common trap of developing rote responding due to deficiencies in the related verbal repertoires.

The ABLLS®-R system is an assessment tool, curriculum guide, and skills-tracking system used to help guide the instruction of language and critical learner skills for children with autism or other developmental disabilities. This practical and parent-friendly tool can be used to facilitate the identification of skills needed by a student to effectively communicate and learn from everyday experiences.

The ABLLS-R provides a comprehensive review of 544 skills from 25 skill areas including language, social interaction, self-help, academic and motor skills that most typically developing children acquire prior to entering kindergarten. The task items within each skill area are arranged from simpler to more complex tasks. Expressive language skills are assessed based upon the behavioral analysis of language as presented by Dr. B.F. Skinner in his book, *Verbal Behavior* (1957)

Core Content Areas

English/Language Arts: The National Reading Panel (NRP) concluded that reading instruction is complex. Children come to the classroom with different levels of preparation and skills. The NRP states that learning to read requires a combination of skills that includes phonemic awareness, phonics, fluency and reading comprehension skills. AZACS will help children build a strong reading foundation that will grow year after year. AZACS feels that it is important to build a non-fiction background knowledge in a coherent and sequenced way and we plan to do that by integrating topics from history, geography, science and the arts. Students will learn strategies to help them become competent readers who are able to pinpoint important details in a story or reading passage. AZACS teachers will create a learning environment that focuses on a deeper understanding of language that promotes meaningful and rigorous lessons so the students can read and comprehend complex texts. They will learn to read and write poetry and will be exposed to a variety of fiction and drama novels. For the purposes of creating quality writing material, such a research papers, AZACS students will be taught how to gather information from a variety of sources including an encyclopedia, an atlas, interviews, the internet and magazines.

Specific materials that will be used to teach the ADE 2010 ELA Standards (CCSS) include SRA Reading Mastery and SRA reading Mastery Plus. Students who need slower pace instruction to learn to read will use either The Edmark Reading Program or the PCI Reading Program. Both programs are research-based and are designed to teach non-readers to read in a very systematic

way using ABA based principals. Students working at grade level will use the Treasures Curriculum by McGraw-Hill. This curriculum is based on the Arizona Common Core Standards and offers opportunities for differentiated instruction. This grade level curriculum is reflected in the Curriculum Samples included in this application.

Math: Math skills will be built upon each year as the students move through the different grade levels at AZACS. Proficiency in math is essential to academic success and fluency helps students make smart decisions in all aspects of life. Students will start off in kindergarten by building a foundation of number recognition and sense. They will begin to work on computation, measurement, money, time, patterns, classification and geometry. AZACS teachers will use real life application to create a rigorous learning environment where students will be able to gain a deep conceptual understanding of math. Students will first master skills in individual settings and then apply the learning by working cooperatively on hands on projects with their peers. Through the years their skills will grow to include fractions, decimals, measurement, ratio, percentage and pre-algebra.

AZACS teachers will utilize research-based programming such as SRA Math and Touch Points Math to meet the needs of a wide variety of learners. Students will learn math using hands on manipulatives, cooperative group learning and one-on-one direct instruction as appropriate. Students working at grade level will use the My Math Curriculum by McGraw-Hill. This curriculum is based on the Arizona Common Core Standards and offers opportunities for differentiated instruction. This grade level curriculum is reflected in the Curriculum Samples included in this application.

Science/Social Studies: The students at AZACS will learn to seek information from a variety of sources and will be confident in their abilities to locate needed information. There will be a large cross over between The Social Studies Program and the English Language Arts Program as students are taught to derive a deeper meaning from their reading material. Over the years, highly qualified teachers will teach students geography, American history, world history and government and politics. In the area of science, students will learn about plants, animals and the human body. They will also explore the earth, astronomy and biology.

At AZACS, we will use SRA Social Studies and SRA Science to teach a wide range of learners the Common Core Standards. Students will also be exposed to a variety of different cultures in and outside of the classroom. Teachers at AZACS will use real life applications by using materials such as, newspapers, magazines, media and technology to gather information. They will also create an enriching environment for students by conducting frequent science experiments and projects based learning.

Individualized Instruction: AZACS will be set up to work with students with a wide variety of abilities. Based on our target population, we anticipate most students will be working off of Individualized Education Plans (IEPs) that are specific to their needs. Students who are not on an IEP will also have customized education plans in the form of Personalized Education Plans (PEPs).

Aside from education in the areas of English/Language Arts, Math and Social Studies/Science, learners with ASD also need programming to meet their needs in the areas of communication,

social/emotional and activities of daily living (ADL). Each of these skills will be aligned with a specific ADE 2010 Math or ELA Standard (CCSS) within the IEP.

Communication: Students at AZACS will receive intensive ABA instruction focusing on the use of language through either vocal means (speaking) or through augmentative and alternative communication (AAC) such as voice-output devices or picture exchange. Using the VB-MAPP and the ABLLS-R as a guide, each learner will have a unique language profile that will focus on their individual needs. The goal at AZACS will be for every student to have a functional communication system with the ability to respond at their highest potential in the following areas:

- Receptive language
- Imitation
- Vocal imitation
- Requesting (Manding)
- Labeling (Tacting)
- Intraverbal responding
- Generalized responding

Social/Emotional: Many individuals with Autism display high rates of self-stimulatory behaviors, and exhibit challenging behaviors that can interfere with their ability to access educational content in a meaningful way. The areas of training detailed below are targeted to mitigate the primary deficits often seen in attending, communication, appropriate behavior, play, and peer interaction. Each student will receive an individualized social skills curriculum specific to his or her needs as indicated by scores on standardized assessments such as the Vineland as well as observation and parent interview. Programs such as Social Thinking will be used as a guide for creating the individualized program each student may need. If a student continues to have behavior problems that interfere with their learning, he or she will also have an individualized behavior support plan. Areas of training include:

- Reinforcer effectiveness
- Cooperation
- Following classroom routines
- Social interaction
- Group instruction
- Appropriate play skills

Activities of Daily Living (ADL): A core component of AZACS philosophy is that every student should reach their highest potential. For this reason, each student will receive instruction for the purpose of helping them become as independent as possible. Acquisition of self help skills such as toileting, hand washing, and safety awareness are critical for students to be able to transition to less restricted environments with their typically developing peers and for students to be able to function in a classroom setting. Using baseline assessments, observations, parent interview, the ABLLS-R and the Individualized Goal Selection Curriculum to guide curriculum development, each student will have their own unique daily living program of instruction. Daily living areas include:

- Dressing
- Eating
- Grooming
- Toileting
- Computer use
- Safety skills
- Motor
- Gross motor
- Fine motor

Methods of Instruction

The Arizona Autism Charter School will use scientifically based teaching methodologies to help the students learn the necessary skills to be successful. The AZACS teachers are not only teaching academic skills, their lessons will have a strong emphasis on teaching communication, language and activities daily living skills. The following methodologies are based on the principles of applied behavior analysis (ABA) and will create the foundation for teaching and learning at the AZACS.

Multi-Grade Classroom: Students with autism have various levels of functioning and academic abilities that don't necessarily correlate with age or grade level. For this reason, AZACS will have multi-grade classrooms that will group students based on their needs and abilities. AZACS plans to have one kindergarten classroom, four 1st-3rd classrooms and four 4th-5th classrooms for a total of nine classrooms. Depending on enrollment, AZACS plans to offer two grade-level classrooms that will operate as similarly as possible to a typical public school program. These classrooms will be used for students who are getting ready to transition back to a more typical public school setting, but still need supports. The types of lesson plans offered in these grade-level classrooms are reflected in the Curriculum Samples included with this application.

Direct Instruction: Direct instruction is a systematic way of planning, communicating, and delivering in the classroom. Teachers learn scripts and present materials in a very organized and structured way to encourage repetition and foster rapid skill acquisition.

Cooperative Learning Groups: Students of different abilities will work together in small groups of 2-5 children. They will be taught to learn from one another and share ideas and responsibilities. They will work through an assignment until all team members are able to successfully understand and complete it.

Differentiated Instruction: All students learn differently. Using differentiated instruction teachers will take the time to understand the different learning styles of all of the students and will constantly modify instruction to ensure all students have the ability to learn effectively in the classroom.

Discrete Trial Training (DTT): DTT involves breaking a skill down into short simple trials. Students are taught to respond to a particular stimulus and are provided with prompting in order to be successful. Reinforcement is used to motivate students to complete the trials successfully.

Natural Environment Teaching (NET)/ Pivotal Response Treatment (PRT): NET and PRT encourage learning in the natural environment. Skills are more easily generalized when they are being taught in all environments as opposed to students being taught a skill in one environment and then needing to generalize that skill to another environment. Students are taught using materials in their natural environment and that are highly motivating to them.

Applied Verbal Behavior (AVB): AVB is the application of the science of behavior analysis in teaching verbal behavior. It is very effective for teaching non-verbal or minimally verbal children how to speak. Some of the primary verbal operants, which are most often initially taught to children with autism, are vocal imitation, making requests or mands, object labeling, and intraverbals, or responding to wh- questions (who, what, when, where, why).

Errorless Teaching: Errorless teaching is an instructional strategy that ensures children always respond correctly. As each skill is taught, children are provided with a prompt or cue immediately following an instruction. The immediate prompt prevents any chance for incorrect responses. Unlike other teaching procedures where opportunities for initial mistakes are allowed and then corrected through prompting, errorless learning's immediate prompting ensures that a child may only respond correctly. Prompts are systematically removed until children are able to respond correctly on their own.

Scaffolding/Shaping: Students will be given support through a variety of different modes (modeling, prompting, guided notes, outlines, visual cues,…) so that they are able to be successful. Over time, these supports will be systematically faded in and out as necessary to guide students towards independence with a specific skill.

Task Analysis: Tasks Analyses are used to teach a student to perform a skill that has many different steps such a completing a worksheet, filling in a word bubble, or unpacking their lunch. It is a process of analyzing and articulating the kind of learning that you expect the learners to know how to perform. Instructional designers perform a task analysis in order to:

- Determine the instructional goals and objectives;
- Define and describe in detail the tasks and sub-tasks that the student will perform;
- Specify the knowledge type (declarative, structural, and procedural knowledge) that characterize a job or task;
- Select learning outcomes that are appropriate for instructional development;
- Prioritize and sequence tasks;
- Determine instructional activities and strategies that foster learning;
- Select appropriate media and learning environments; and
- Construct performance assessments and evaluation

Formative & Summative Assessment Plan

All students at AZACS will be given a diagnostic exam upon entering the school to determine appropriate classroom placement and ability level. The main diagnostic tests used will be the Assessment of Basic Language and Learning Skills (ABLLS), the Verbal Behavior Milestones Assessment and Placement Program (VB-MAPP) and previous AIMS or AIMS-A test results. The ABLLS and VB-MAPP diagnostic and testing instruments are considered the best tools for

determining academic skills and cognitive levels for students on the autism spectrum. These, along with previous AIMS results, will give teachers and executive staff a great picture of students' abilities and what individualized programs of instructions need to be created for them to move them to the next level. Scores on these tests will also be compared to the ADE 2010 Math and ELA Standards (CCSS) to further help identify individual goals for students who are testing below the appropriate grade level for their age.

The Curriculum Director will develop and supervise teachers in the development of formative assessments. These formative assessments will be data driven and will be conducted regularly throughout lessons and programs to ensure teacher effectiveness and student learning. While using Direct Instruction in all Core Content Areas, AZACS teachers will use Active Student Responding (ASR) to check for comprehension on the subject being taught. Scripting for Direct Instruction will be acquired from curriculum materials and adapted by the Curriculum Director and teachers to meet the needs of their students. During ASR, teachers will ask questions throughout the lesson and the students will respond by writing the answers on white boards and holding them up for the teacher to see. This will allow the teacher to determine how many students comprehend the material being presented and will guide any changes that need to be made.

Formative assessments will also consist of pre and post tests, some available through the SRA curriculum, formal and in-formal observations and self-evaluations. As part of the SRA Reading curriculum, reading tests will be conducted weekly to check for fluency, accuracy and comprehension. Information gathered during the formative assessment process will help teachers determine how quickly students are grasping the material. It will be used as a tool to verify teacher and program effectiveness and will be a driving force in making appropriate program modifications and adaptations for special learners.

The summative assessment plan will also include the use of pre and post assessments in specific core content areas. Summative assessments will include testing at the end of each unit/program in the SRA curriculums in Reading/Language Arts, Math, Science and Social Studies. Additional summative assessments will be created by Curriculum Director and teachers in the areas of communication and adaptive skills. Teachers will be able to identify what students know at the beginning of the school year, the end of each quarter or a specific unit and at the end of the school year. Careful analysis of assessment at key intervals will ensure students are growing and reaching key academic benchmarks.

The main summative assessments for the year will be the AIMS and AIMS-A. Student scores will be compared to their previous year's scores as well as grade level bench marks in reading, writing and math. The AIMS and AIMS-A will be conducted towards the end of the school year and will measure proficiency of the ADE 2010 Math and ELA Standards (CCSS).

Students who are not at grade level academically or who require an individualized education due to their diagnosis and/or deficits in communication, social/emotional and/or activities of daily living will have an Individualized Education Plan (IEP). The team who creates the IEP will consist of teachers, psychologist, related service staff as appropriate (Speech Language Pathologist, Occupational Therapist, etc.), parents and any home support staff. The IEP will be written for a one-year period of time and will detail specific goals that each student will be working on for that school year. Every IEP goal will be aligned to a specific ADE Math or ELA

Standard (CCSS) or an alternate standard and will be created based on a specific need for the student. These needs will be identified during introduction diagnostic testing, formal and in-formal observations and standardized assessments such as the VB-Mapp and the ABLLS-R. IEP goals will be written in measurable terms so it will be easy for staff to identify if progress is being made towards the goal. A sample IEP goal would be: Given a math worksheet with 10 single digit addition problems using numbers 0-9, Mark will answer 8 of the 10 questions correctly for three consecutive days of data.

Each student with will have a daily data sheet that has a chart for each IEP or PEP goal and teachers and support staff will fill it in throughout the day. This data sheet will follow the student throughout the school so that data can be collected across all environments, not just the classroom. AZACS staff will mark either a (+) if the student has performed correctly or a (-) if the student has performed incorrectly on a specific goal. At the end of the day, all of the (+)s and (-)s will be added up and a percentage will be computed for each goal. This information will be entered into an Excel spreadsheet and line graphs will be generated weekly. As part of the formative assessment process, graphs will be reviewed by the Curriculum Director and lead teachers weekly to determine program effectiveness and to ensure appropriate strategies are being used. Teachers will have a variety of different methods of instruction to choose from should changes need to be made.

Data collected on IEP and PEP goals will not only be used to determine program and teacher effectiveness, but it will also be part of the summative assessment process to look at student progress towards mastering their specific ADE 2010 Math and ELA Standards (CCSS). Baseline data will be collected prior to teaching any of the goals to ensure the student has not already acquired the skill. Data will also be reviewed for mastery every quarter and progress notes will be generated detailing progress towards specific goals. At the end of the school year, the IEP/PEP team will come together for an annual review and each of the student's goals will be analyzed using graphs and anecdotal data collected by the teachers and support staff. New goals will be generated based on the skills the student has or has not acquired over the school year.

This data driven and individualized program based on state standards delivered via Applied Behavior Analysis strategies will ensure students at AZACS have the best chance at learning and reaching grade level benchmarks.